



State of Ohio Environmental Protection Agency

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

**CERTIFIED MAIL**

Street Address:

50 West Town Street, Suite 700

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

Mailing Address:

Lazarus Gov. Center  
P.O. Box 1049

**Application No: 02-21700**

**Fac ID: 0285030295**

**DATE: 3/6/2008**

Metromedia Technologies Inc  
Carl Udell  
1061 Venture Blvd  
Wooster, OH 44691

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

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00 which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

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

Sincerely,

Michael W. Ahern, Manager  
Permit Issuance and Data Management Section  
Division of Air Pollution Control

CC: USEPA

NEDO



Permit To Install  
Terms and Conditions

Issue Date: 3/6/2008  
Effective Date: 3/6/2008

**FINAL ADMINISTRATIVE MODIFICATION OF PERMIT TO INSTALL 02-21700**

Application Number: 02-21700  
Facility ID: 0285030295  
Permit Fee: **\$2600**  
Name of Facility: Metromedia Technologies Inc  
Person to Contact: Carl Udell  
Address: 1061 Venture Blvd  
Wooster, OH 44691

Location of proposed air contaminant source(s) [emissions unit(s)]:

**1061 Venture Blvd  
Wooster, Ohio**

Description of proposed emissions unit(s):

**Administrative Modification to consolidate PTI requirements and remove HAPs limits and record keeping requirements.**

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Chris Korleski  
Director

## Part I - GENERAL TERMS AND CONDITIONS

### A. State and Federally Enforceable Permit-To-Install General Terms and Conditions

#### 1. Monitoring and Related Recordkeeping and Reporting Requirements

- a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
  - i. The date, place (as defined in the permit), and time of sampling or measurements.
  - ii. The date(s) analyses were performed.
  - iii. The company or entity that performed the analyses.
  - iv. The analytical techniques or methods used.
  - v. The results of such analyses.
  - vi. The operating conditions existing at the time of sampling or measurement.
- b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
  - i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
  - ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to

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the appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See B.9 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the appropriate Ohio EPA District Office or local air agency every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
  - iv. If this permit is for an emissions unit located at a Title V facility, then each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d. The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

## **2. Scheduled Maintenance/Malfunction Reporting**

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

## **3. Risk Management Plans**

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

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**4. Title IV Provisions**

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

**5. Severability Clause**

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

**6. General Requirements**

- a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification
- b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c. This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d. This permit does not convey any property rights of any sort, or any exclusive privilege.
- e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to

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the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

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## **7. Fees**

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

## **8. Federal and State Enforceability**

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

## **9. Compliance Requirements**

- a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.
- b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
  - i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
  - ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
  - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

- iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
  - i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
  - ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

#### **10. Permit-To-Operate Application**

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).
- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this permit is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

#### **11. Best Available Technology**

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

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**12. Air Pollution Nuisance**

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

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### **13. Permit-To-Install**

A permit-to-install must be obtained pursuant to OAC Chapter 3745-31 prior to "installation" of "any air contaminant source" as defined in OAC rule 3745-31-01, or "modification", as defined in OAC rule 3745-31-01, of any emissions unit included in this permit.

## **B. State Only Enforceable Permit-To-Install General Terms and Conditions**

### **1. Compliance Requirements**

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

### **2. Reporting Requirements**

The permittee shall submit required reports in the following manner:

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

### **3. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder.

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The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

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**4. Authorization To Install or Modify**

If applicable, authorization to install or modify any new or existing emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

**5. Construction of New Sources(s)**

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

**6. Public Disclosure**

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

**7. Applicability**

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

**8. Construction Compliance Certification**

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

**9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)**

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly (i.e., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

**C. Permit-To-Install Summary of Allowable Emissions**

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

SUMMARY (for informational purposes only)  
 TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS Pollutant Tons Per Year

VOC	40.60
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Please provide a fairly detailed description of the basis for the modification and how the permit is being modified:

The permittee has changed the solvent used in it's processes so that no HAPs or air toxics are employed. PTI 02-21700 was originally issued for all units at the facility at that time. Since then, PTIs have been issued for two new units, R123 and R027. These PTIs are now incorporated into this permit.

I am marking this permit to go draft again to ensure that the requirement to use the control device is federally enforceable. Because this synthetic minor was originally written while the facility under the Title V permitting program, the State-Federal format was used. This will not be changed.

Half the fee was applied per the policy. This adds up to \$2,600, but admin. mods. should not exceed

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\$2,000.

Changes:

- \* Added R123 and R027
- \* Modified the combined VOC limit to reflect the most recent from PTI 02-22647.
- \* Changed maximum ink application rate from 526 ft<sup>2</sup>/hr to 500 ft<sup>2</sup>/hr in testing section. Units were originally permitted based on 526 ft<sup>2</sup>/hr, but rigorous testing has determined 500 ft<sup>2</sup>/hr can't be exceeded.
- \* VOC content in testing section calculation increased from 6.5 lbs/gal to 6.8 lbs/gal. (Hourly VOC emission rate actually went down slightly, but due to rounding, the limit is still 0.35 lb/hr.)
- \* HAPs limits and associated record keeping, reporting, and testing requirements removed.
- \* Added the following operational restriction to each emissions unit requiring that no HAPs be employed unless a new PTE is submitted:

The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

- \* Modified all references to listing of emissions units to add in R123 and R027.
- \* Changed testing requirement to coincide with PTO time frame for testing.
- \* Added list of superceded PTIs to facility side. (If I add this to every emissions unit, it greatly and unnecessarily lengthens the permit.)

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## **Part II - FACILITY SPECIFIC TERMS AND CONDITIONS**

### **A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions**

1. The terms and conditions specified in this administratively modified PTI supercede those of the following PTIs:
  - a. PTI 02-12791 issued on July 8, 1999 and modified on September 16, 2003;
  - b. PTI 02-21700 issued on March 28, 2006;
  - c. PTI 02-22325 issued on January 30, 2007; and
  - d. PTI 02-22647 issued on October 30, 2007.

### **B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions**

1. As part of this administrative modification, terms relating to the Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") were removed. The permittee no longer employs materials subject to the "Air Toxic Policy." If materials are changed in the future, a determination must be made as to whether the change is subject to the "Air Toxic Policy." If required, a modeling demonstration shall be performed and submitted to the Northeast District Office of Ohio EPA.

Emissions Unit ID: R001

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R001 - ink jet printer 53.1 feet long and 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below.  The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.
- 2.e The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

Emissions Unit ID: R001

**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

**III. Monitoring and/or Record keeping Requirements**

Emissions Unit ID: R001

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in

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- coatings, inks, and cleanup materials employed;
- b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
  - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in

Emissions Unit ID: R001

degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.

2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## **V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:

**Modification Issued: 3/6/2008**

- a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

**Modification Issued: 3/6/2008**

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

- f. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and

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submitted to the Northeast District Office of Ohio EPA within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Northeast District Office of Ohio EPA.

**VI. Miscellaneous Requirements**

None

**Modification Issued: 3/6/2008**

**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R001 - ink jet printer 53.1 feet long and 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

Emissions Unit ID: R001

**Modification Issued: 3/6/2008**

**VI. Miscellaneous Requirements**

None

**Modification Issued: 3/6/2008**

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R002 - ink jet printer 53.1 feet long and 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

**Modification Issued: 3/6/2008**

**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall

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calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:

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- a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
- d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
  - d. all instances when an audible alarm was activated, the cause of each alarm (if

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known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.

2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:

- a. Emission Limitation:

All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

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MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

## c. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

## Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the

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results of the emissions test(s).

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

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

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R002 - ink jet printer 53.1 feet long and 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R003 - ink jet printer 53.1 feet long and 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below.  The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

**Modification Issued: 3/6/2008**

**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall

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calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:

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- a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
- d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
  - d. all instances when an audible alarm was activated, the cause of each alarm (if

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known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.

2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## V. Testing Requirements

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

### Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

### Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

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- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

- 2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R003 - ink jet printer 53.1 feet long and 17.3 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

**Modification Issued: 3/6/2008**

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R004 - ink jet printer 61.4 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:

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- a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
- d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

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- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## V. Testing Requirements

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
- a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

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DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

- 2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s)

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may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R004 - ink jet printer 61.4 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

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

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R005 - ink jet printer 61.4 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below.  The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).
This emissions unit has been modified by installing an additional print head, identical to the first.		

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.70 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and

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40.60 tons per year.

- 2.d** The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.
- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each

Emissions Unit ID: R005

regeneration cycle is not within five (5) percent of the set point.

5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of

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OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.

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4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

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5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section

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A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:

- a. Emission Limitation:

All OC/VOC emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.70 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE) \times 2 \text{ (print heads)}$$

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where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

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Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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emissions unit and/or the performance of the control equipment.

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

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R005 - ink jet printer 61.4 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

Modification Issued: 3/6/2008

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R006 - ink jet printer 61.4 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

**Metromedia Technologies Inc**

**DTI Application: 02 21700**

**Facility ID:**

**0285030295**

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall

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calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;

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- c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
  - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## V. Testing Requirements

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.  
  
Applicable Compliance Method:  
Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
  - b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.  
  
Applicable Compliance Method:  
Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

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E = hourly emission rate, in lbs/hr;  
MP = maximum amount of material printed per hour ( 500 sq. ft./hr);  
G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);  
OC = maximum ink/coating OC content ( 6.8 lbs/gal);  
RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and  
DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.

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

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

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

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**VI. Miscellaneous Requirements**

None

**Modification Issued: 3/6/2008**

**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R006 - ink jet printer 61.4 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R007 - ink jet printer 61.4 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:

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- a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
- d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

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- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## V. Testing Requirements

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
- a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- Applicable Compliance Method:  
Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

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DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
- b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
- c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
- e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s)

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may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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

**VI. Miscellaneous Requirements**

None

**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R007 - ink jet printer 61.4 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R008 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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**Facility ID:**

**0285030295**

Emissions Unit ID: R008

Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall

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calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

#### IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

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- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:

- a. Emission Limitation:

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

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OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study

(0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

## c. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

## Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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

completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Northeast District Office of Ohio EPA.

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R008 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R009 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall

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calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

6. The permittee shall collect and record the following information each month for emissions units R001 through R022, R025, and R026:
  - a. the name and identification number of each ink/coating employed;
  - b. the individual HAP\* content for each HAP of each ink/coating in pounds of individual HAP per gallon of ink/coating, as applied;
  - c. the total combined HAP content of each ink/coating in pounds of combined HAPs per gallon of ink/coating, as applied [sum all the individual HAP contents from (b)];
  - d. the number of gallons of each ink/coating employed;
  - e. the name and identification number of each cleanup material/thinner employed;

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- f. the individual HAP content for each HAP of each cleanup material/thinner, in pounds of individual HAP per gallon of cleanup material, as applied;
- g. the total combined HAP content of each cleanup material/thinner, in pounds of combined HAPs per gallon of cleanup material/thinner, as applied [sum all the individual HAP contents from (f)];
- h. the number of gallons of each cleanup material/thinner employed;
- i. the total individual HAP input for each HAP from all inks/coatings and cleanup materials/thinner employed, in pounds per month [for each HAP the sum of (b) times (d) for each ink/coating, plus the sum of (f) times (h) for each cleanup material/thinner];

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**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
  - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100

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percent by weight and a minimum destruction efficiency of 95 percent by weight.

**Applicable Compliance Method:**

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

b. **Emission Limitation:**

OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

**Applicable Compliance Method:**

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

c. **Emission Limitation:**

OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

**Applicable Compliance Method:**

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

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

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- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
- b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
- c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
- e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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

## **VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R009 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R010 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

**Metromedia Technologies Inc**

**DTI Application: 02 21700**

**Facility ID:**

**0285030295**

Emissions Unit ID: R010

Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall

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calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;

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- c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
  - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## V. Testing Requirements

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

### Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

### Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

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E = hourly emission rate, in lbs/hr;  
MP = maximum amount of material printed per hour ( 500 sq. ft./hr);  
G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);  
OC = maximum ink/coating OC content ( 6.8 lbs/gal);  
RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and  
DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
- b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
- c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.

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

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

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

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**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R010 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R011 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below.  The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).
The terms and conditions specified in this PTI supercede those of PTI 02-12791 issued on July 8, 1999 and modified on September 16, 2003.		

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001

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through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

- 2.d** The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.
- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

## II. Operational Restrictions

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass

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emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.

6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of

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OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.

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4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

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5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section

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A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:

- a. Emission Limitation:

All OC/VOC emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

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where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

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Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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emissions unit and/or the performance of the control equipment.

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

**VI. Miscellaneous Requirements**

None

Emissions Unit ID: R011

**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R011 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

**2.a** None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R012 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

**Metromedia Technologies Inc**

**DTI Application: 02-21700**

**Facility ID:**

**0285030295**

Emissions Unit ID: R012

Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall

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calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;

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- c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
  - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## V. Testing Requirements

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
- a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

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E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

c. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

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Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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

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request additional time for the submittal of the written report, where warranted, with prior approval from the Northeast District Office of Ohio EPA.

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R012 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R013 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:

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- a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
- d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

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- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the

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previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:

- a. Emission Limitation:  
Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
keeping specified in section A.III.5.
2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.

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- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.

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- b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
- c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
- e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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

**VI. Miscellaneous Requirements**

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**Metromedia Technologies Inc**

**DTI Application: 02 21700**

**Facility ID:**

**0285030295**

Emissions Unit ID: R013

None

**Modification Issued: 3/6/2008**

**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R013 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R014 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

**Modification Issued: 3/6/2008**

**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

**Metromedia Technologies Inc**

**DTI Application: 02-21700**

**Facility ID:**

**0285030295**

Emissions Unit ID: R014

Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall

Emissions Unit ID: R014

calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

#### **IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

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- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:  
equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study

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(0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

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

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- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
- b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
- c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
- e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

- f. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Northeast District Office of Ohio EPA within 30 days following completion of the test(s). The permittee may request additional time for the

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submittal of the written report, where warranted, with prior approval from the Northeast District Office of Ohio EPA.

**VI. Miscellaneous Requirements**

None

**Modification Issued: 3/6/2008**

**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R014 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R015 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall

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calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;

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- c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
  - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## V. Testing Requirements

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

### Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

### Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

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E = hourly emission rate, in lbs/hr;  
MP = maximum amount of material printed per hour ( 500 sq. ft./hr);  
G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);  
OC = maximum ink/coating OC content ( 6.8 lbs/gal);  
RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and  
DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.

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

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

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

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**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R015 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R016 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall

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calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

#### **IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

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- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.  
  
Applicable Compliance Method:  
Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
  - b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.  
  
Applicable Compliance Method:  
Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

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E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

c. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s)

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may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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

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**DTI Application: 02 21700**

**Facility ID:**

**0285030295**

Emissions Unit ID: R016

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R016 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R017 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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**Facility ID:**

**0285030295**

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall

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calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;

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- c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
  - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## **V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
  - a. **Emission Limitation:**  
All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

**Applicable Compliance Method:**

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. **Emission Limitation:**  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

**Applicable Compliance Method:**

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

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E = hourly emission rate, in lbs/hr;  
MP = maximum amount of material printed per hour ( 500 sq. ft./hr);  
G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);  
OC = maximum ink/coating OC content ( 6.8 lbs/gal);  
RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and  
DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:  
Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
- b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
- c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.

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

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

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

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**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R017 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R018 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

### III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:

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- a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
- d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

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- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## V. Testing Requirements

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
- a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- Applicable Compliance Method:  
Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

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DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:  
Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
- b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
- c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
- e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s)

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may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R018 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R019 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).
This emissions unit has been modified by installing an additional print head, identical to the first.		

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.70 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and

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40.60 tons per year.

- 2.d** The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.
- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each

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regeneration cycle is not within five (5) percent of the set point.

5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

### III. Monitoring and/or Record keeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action

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taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

#### IV. Reporting Requirements

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the

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limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;

- c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and
  - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
- a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.  
  
Applicable Compliance Method:  
Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.
  - b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.70 pound per hour.

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Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE) \times 2 \text{ (print heads)}$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

c. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast

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District Office of Ohio EPA.

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

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

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

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R019 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**Metromedia Technologies Inc**

**DTI Application: 02 21700**

**Facility ID:**

**0285030295**

Emissions Unit ID: R019

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R020 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

### III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

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5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of

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the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

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**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:

a. Emission Limitation:

All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

b. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

c. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

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Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

Personnel from the Northeast District Office of Ohio EPA shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the

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**Facility ID:****0285030295**

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testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

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

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R020 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R021 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

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

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:

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- a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
- b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
- c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
- d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

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- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the

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previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

## Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

## Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

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- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

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Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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emissions unit and/or the performance of the control equipment.

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

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R021 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R022 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below.  The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).
This emissions unit has been modified by installing an additional print head, identical to the first.		

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.70 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and

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40.60 tons per year.

- 2.d** The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.
- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each

Emissions Unit ID: R022

regeneration cycle is not within five (5) percent of the set point.

5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B). Parameter deviations due to such malfunctions, that comply with the requirements of

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OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.

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4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

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5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section

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A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:

- a. Emission Limitation:

All OC/VOC emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.70 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE) \times 2 \text{ (print heads)}$$

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where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour ( 500 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);

OC = maximum ink/coating OC content ( 6.8 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

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Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

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

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emissions unit and/or the performance of the control equipment.

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

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R022 - ink jet printer 51.0 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**Metromedia Technologies Inc**

**DTI Application: 02 21700**

**Facility ID:**

**0285030295**

Emissions Unit ID: R022

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R025 - twist printing machine no. 1 inkjet printing on vinyl or other substrates, controlled by Regensorb concentrator and thermal oxidizer	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.03 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

### III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

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5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of

Emissions Unit ID: R025

the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## V. Testing Requirements

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.03 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour (250 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0003 gal/sq. ft.);

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OC = maximum ink/coating OC content (7.6 lbs/gal);  
RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and  
DE = minimum fractional destruction efficiency of the control system (0.95).

- c. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:  
Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
- b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
- c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
- e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test

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

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

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

## **VI. Miscellaneous Requirements**

None

**Modification Issued: 3/6/2008**

**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R025 - twist printing machine no. 1 inkjet printing on vinyl or other substrates, controlled by Regensorb concentrator and thermal oxidizer	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R026 - twist printing machine no. 2 inkjet printing on vinyl or other substrates, controlled by Regensorb concentrator and thermal oxidizer	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.03 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**II. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any three-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

**III. Monitoring and/or Record keeping Requirements**

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in A.II.3 and A.II.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.

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4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.
5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

#### **IV. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance.
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section A.II.3, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of

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the regeneration cycle did not comply with the limitations specified in section A.II.4, based on the records maintained pursuant to section A.III.4 of these terms and conditions, and the magnitude of each deviation; and

- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027 combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
All OC/VOC emitted by this emissions unit shall be shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent by weight and a minimum destruction efficiency of 95 percent by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section A.V.2 below. Method 24A shall be used to determine the organic compound contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:  
OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.03 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

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where:

E = hourly emission rate, in lbs/hr;

MP = maximum amount of material printed per hour (250 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0003 gal/sq. ft.);

OC = maximum ink/coating OC content (7.6 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

c. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the annual OC/VOC limit shall be determined by the record keeping specified in section A.III.5.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirement.
- a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test

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

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

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

**VI. Miscellaneous Requirements**

None

Emissions Unit ID: R026

**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R026 - twist printing machine no. 2 inkjet printing on vinyl or other substrates, controlled by Regensorb concentrator and thermal oxidizer	None	None

**2. Additional Terms and Conditions**

**2.a** None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R027 - twist printing machine no. 3 inkjet printing on vinyl or other substrates, controlled by Regensorb concentrator and thermal oxidizer	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent, by weight, and a minimum destruction efficiency of 95 percent, by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.11 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026 and R027, combined, shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**B. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

### C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in sections B.3 and B.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

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5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026 and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

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

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section B.3, based on the records maintained pursuant to section C.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section B.4, based on the records maintained pursuant to section C.4 of these terms and conditions, and the magnitude of each deviation; and
  - d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable) and the corrective action

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taken to restore the correct operating parameters.

2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026 and R027, combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

**E. Testing Requirements**

1. Compliance with the emission limitations specified in sections A.1 and A.2 shall be determined in accordance with the following methods:

- a. Emission Limitation:

All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent, by weight, and a minimum destruction efficiency of 95 percent, by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section E.2 below. Method 24A shall be used to determine the OC contents of the coatings, inks and cleanup materials.

- b. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.11 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

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MP = maximum amount of material printed per hour (1,200 sq. ft./hr);

G = ink usage factor, in gallons of ink/coating per sq. ft. (0.00029 gal/sq. ft.);

OC = maximum ink/coating OC content (7.6 lbs/gal);

RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and

DE = minimum fractional destruction efficiency of the control system (0.95).

## c. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026 and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

## Applicable Compliance Method:

Compliance with the short-term (lbs/hr) OC/VOC emission limitation shall be demonstrated based upon the emission testing requirements specified in section E.2.

Compliance with the annual OC/VOC emission limitation shall be determined by the record keeping requirements specified in section C.5.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emission testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
  - d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall

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submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).

- f. Personnel from the Northeast District Office of Ohio EPA shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Northeast District Office of Ohio EPA within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Northeast District Office of Ohio EPA.

**F. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R027 - twist printing machine no. 3 inkjet printing on vinyl or other substrates, controlled by Regensorb concentrator and thermal oxidizer	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**Metromedia Technologies Inc**

**DTI Application: 02 21700**

**Facility ID:**

**0285030295**

Emissions Unit ID: R027

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R123 - ink jet printer 61.4 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	OAC rule 3745-31-05(A)(3) OAC rule 3745-21-07(G)(2)	See A.I.2.a through A.I.2.d below. The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3).

**2. Additional Terms and Conditions**

- 2.a All organic compounds/volatile organic compounds (OC/VOC) emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent, by weight, and a minimum destruction efficiency of 95 percent, by weight.
- 2.b OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.
- 2.c OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.
- 2.d The hourly and annual OC/VOC emission limitations are based on this emissions unit's and the facility's potential to emit. Therefore, no record keeping or reporting are required to maintain compliance with these limits.

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- 2.e** The building enclosure housing this emissions unit meets the criteria of a permanent total enclosure (defined in U.S. EPA's Reference Method 204), as previously demonstrated in the compliance tests performed on June 30, 1999 and March 24, 2005.

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**B. Operational Restrictions**

1. The permittee has provided a detailed analysis of facility-wide potential to emit that indicates that emissions of chemical(s) considered to be a Hazardous Air Pollutant (HAP) as identified in Section 112(b) of Title III of the Clean Air Act are less than major source thresholds (i.e., less than 10 tons of any single HAP; less than 25 tons of total HAPs used), without add-on controls.

The permittee shall not use HAP-containing materials in this emissions unit unless an updated potential-to-emit analysis has been submitted to and approved in writing by Ohio EPA's Northeast District Office; and the results of that analysis indicate that the facility remains an area (i.e., non-major) source of HAP without controls.

2. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall be no more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.
3. The set point for the desorption air stream temperature shall be maintained at or above the temperature established during the most recent emission test that demonstrated the emissions unit was in compliance. The temperature of the desorption air stream during the regeneration cycle shall not be more than 50 degrees Fahrenheit below this set point. An audible alarm shall be activated whenever the temperature of the desorption air stream is more than 50 degrees Fahrenheit below the set point.
4. The set point for the regeneration cycle time shall be maintained at the value established during the most recent emissions test that demonstrated compliance. The permittee shall maintain the duration of each regeneration cycle within five (5) percent of the set point. An audible alarm shall be activated whenever the duration of each regeneration cycle is not within five (5) percent of the set point.
5. Operation of the control equipment outside of the restrictions established above may or may not indicate a mass emission violation. If required by Ohio EPA, compliance with the mass emission limitation shall be determined by performing concurrent mass emission tests and parameter readings shall be used in determining whether or not the operation of the control equipment outside of the restrictions specified above is indicative of a possible violation of the mass emission limitation.
6. Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be reported to the Northeast District Office of Ohio EPA in accordance with OAC rule 3745-15-06(B).

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Parameter deviations due to such malfunctions, that comply with the requirements of OAC rule 3745-15-06(B), do not constitute violations of the operational restrictions for this emissions unit.

### C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain continuous temperature and time monitors that measure the following when the emissions unit is in operation:
  - a. the temperature of the exhaust gases in the combustion zone of the thermal oxidizer;
  - b. the temperature of the desorption air stream entering the concentrator; and
  - c. the duration of each regeneration cycle for the concentrator.

The permittee shall operate a continuous temperature recorder for the temperature of the exhaust gases in the combustion zone of the thermal oxidizer, and record the temperature when the emissions unit is in operation.

Units shall be in degrees Fahrenheit and minutes. The accuracy for each thermocouple, monitor, clock, and recorder shall be guaranteed by the manufacturer to be within one (1) percent of the temperature/time being measured or five (5) degrees Fahrenheit/0.5 minute, whichever is greater. The temperature monitors and recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

2. The permittee shall operate and maintain audible alarms for deviations in the temperature of the desorption air stream entering the concentrator and the duration of each regeneration cycle for the concentrator. The set points and alarm activation levels shall be set at the values specified in sections B.3 and B.4 above.

The permittee shall maintain a log of each instance when an audible alarm is activated, the cause of the alarm, the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operational parameters.

3. The permittee shall maintain a log or record of operating time for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.
4. On each day of operation of the control system for this emissions unit, the permittee shall record the set points and alarm activation levels, and the corresponding values of temperature and time duration. At least once per calendar month, the permittee shall calibrate the set points and alarm activation levels and maintain records of the results of each calibration.

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5. The permittee shall collect and record the following information each month for all organic compounds employed in emissions units R001 through R022, R123, R025, R026, and R027:
  - a. the name and identification of each liquid organic compound contained in coatings, inks, and cleanup materials employed;
  - b. the amount of each liquid organic compound employed in coatings, inks, and cleanup materials, in gallons;
  - c. the OC content of each liquid organic compound employed in coatings, inks, and cleanup materials, in lbs of OC/gallon; and
  - d. the total combined monthly OC emissions [summation of (b x c) for each liquid organic compound employed in coatings, inks, and cleanup materials multiplied by one (1) minus the retention factor determined in the 12/30/97 BAT study (0.209), multiplied by one (1) minus the overall control efficiency determined during the most recent emission test that demonstrated the emissions unit was in compliance].

This information does not have to be kept on a line-by-line basis.

**D. Reporting Requirements**

1. The permittee shall submit quarterly temperature/time deviation (excursion) reports that identify the following:
  - a. all three (3)-hour blocks of time during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature during the most recent emissions test that demonstrated the emissions unit was in compliance;
  - b. all instances when the set points and alarm activation levels for the temperature of the desorption air stream prior to the concentrator did not comply with the limitations specified in section B.3, based on the records maintained pursuant to section C.4 of these terms and conditions, and the magnitude of each deviation;
  - c. all instances when the set points and alarm activation levels for the duration of the regeneration cycle did not comply with the limitations specified in section

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B.4, based on the records maintained pursuant to section C.4 of these terms and conditions, and the magnitude of each deviation; and

- d. all instances when an audible alarm was activated, the cause of each alarm (if known), the time interval of the deviation, the magnitude of the deviation (in degrees Fahrenheit and/or in minutes, as applicable), and the corrective action taken to restore the correct operating parameters.
2. The permittee shall submit annual reports that specify the total OC emissions for emissions units R001 through R022, R123, R025, R026, and R027, combined, for the previous calendar year. These reports shall be submitted to the Northeast District Office of Ohio EPA by January 30 of each year and shall cover the previous calendar year.

## E. Testing Requirements

1. Compliance with the emission limitations specified in sections A.1 and A.2 shall be determined in accordance with the following methods:

- a. Emission Limitation:

All OC/VOC emitted by this emissions unit shall be vented to a flow concentrator and thermal oxidizer with a minimum capture efficiency of 100 percent, by weight, and a minimum destruction efficiency of 95 percent, by weight.

Applicable Compliance Method:

Compliance with the above requirement shall be determined through emission testing as outlined in section E.2 below. Method 24A shall be used to determine the OC contents of the coatings, inks, and cleanup materials.

- b. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in this emissions unit shall not exceed 0.35 pound per hour.

Applicable Compliance Method:

Compliance with the hourly OC/VOC limitation shall be determined using the following equation:

$$E = MP \times G \times OC \times (1 - RF) \times (1 - DE)$$

where:

E = hourly emission rate, in lbs/hr;

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MP = maximum amount of material printed per hour ( 500 sq. ft./hr);  
G = ink usage factor, in gallons of ink/coating per sq. ft. (0.0026 gal/sq. ft.);  
OC = maximum ink/coating OC content ( 6.8 lbs/gal);  
RF = solvent retention factor, determined through the 12/30/97 BAT study (0.209); and  
DE = minimum fractional destruction efficiency of the control system (0.95).

c. Emission Limitation:

OC/VOC emissions from all coatings and inks employed in emissions units R001 through R022, R123, R025, R026, and R027 shall not exceed 9.27 lbs/hr and 40.60 tons per year.

Applicable Compliance Method:

Compliance with the short-term (lbs/hr) OC/VOC emission limitation shall be demonstrated based upon the emission testing requirements specified in section E.2.

Compliance with the annual OC/VOC emission limitation shall be determined by the record keeping requirements specified in section C.5.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirement.
  - a. The emissions testing shall be conducted in accordance with the permit to operate issued on August 30, 2006 for emissions units R001 through R022, R025 and R026. Emissions units R123 and R027 shall also be in operation during this testing.
  - b. The emission testing shall be conducted to demonstrate compliance with the destruction efficiency requirement specified in section A.I.2.a.
  - c. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

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- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Northeast District Office of Ohio EPA.
- e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Northeast District Office of Ohio EPA. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Northeast District Office of Ohio EPA's refusal to accept the results of the emissions test(s).
- f. Personnel from the Northeast District Office of Ohio EPA shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the test and submitted to the Northeast District Office of Ohio EPA within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Northeast District Office of Ohio EPA.

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

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

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
R123 - ink jet printer 61.4 feet long and 22.1 feet wide and corresponding mixing operations controlled by 38,000 scfm Regensorb system	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

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**VI. Miscellaneous Requirements**

None