



State of Ohio Environmental Protection Agency

STREET ADDRESS:

Lazarus Government Center  
50 W. Town St., Suite 700  
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184  
www.epa.state.oh.us

MAILING ADDRESS:

P.O. Box 1049  
Columbus, OH 43216-1049

1/5/2009

Stephen Hultquist  
VERTIS INC  
250 W Pratt St.  
18th Floor  
Baltimore, MD 21201

Certified Mail

No	TOXIC REVIEW
No	PSD
Yes	SYNTHETIC MINOR
No	CEMS
No	MACT
No	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL AND OPERATE  
Facility ID: 0125041807  
Permit Number: P0104236  
Permit Type: OAC Chapter 3745-31 Modification  
County: Franklin

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install and Operate for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit comments on the permit. A public notice will appear in the Ohio EPA Weekly Review and the local newspaper, The Columbus Dispatch. A copy of the public notice and the draft permit are enclosed. This permit has been posted to the Division of Air Pollution Control Web page <http://www.epa.state.oh.us/dapc> in Microsoft Word and Adobe Acrobat format. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall  
Permit Review/Development Section  
Ohio EPA, DAPC  
122 South Front Street  
Columbus, Ohio 43215

and Ohio EPA DAPC, Central District Office  
50 West Town Street, 6th Floor  
P.O. Box 1049  
Columbus, OH 43216-1049

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified in writing if a public hearing is scheduled. A decision on issuing a final permit-to-install and operate will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install and Operate is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Ohio EPA DAPC, Central District Office at (614)728-3778.

Sincerely,

*Michael W. Ahern*  
Michael W. Ahern, Manager  
Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA Region 5 *Via E-Mail Notification*  
Ohio EPA-CDO

Ted Strickland, Governor  
Lee Fisher, Lieutenant Governor  
Chris Korleski, Director





## Permit Strategy Write-Up

1. Check all that apply:

Synthetic Minor Determination

Netting Determination

2. Source Description:

The applicant, Vertis Inc. (facility ID No. 01-25-04-1807), located at 4051 Fondorf Drive, Columbus, Franklin County, has submitted a PTI application for a project which will result in the installation of a new Baker Perkins G14 8-unit heatset web offset lithographic press with associated dryers and automatic blanket washers (K012) to be routed to two existing RTOs connected in tandem (permitted through FEPTIO No. P0104179). In conjunction with the installation of K012, Vertis Inc., is seeking a Chapter 31 modification of PTI No. 01-01303 to account for the fact the facility will cease facility-wide use of coldset ink and coldset fountain solutions and switch to a heatset fountain solution and blanket wash with lower VOC contents. In order to accommodate the change in materials Vertis Inc. requires an increase in the heatset ink, fountain wash solution and blanket wash usage restrictions. Additionally, Vertis Inc. is asking to have presses K004, K007, and K009 removed from records. The net result of the changes is the maintenance of the federally enforceable emission limitations established in PTI No. 01-01303 to keep the facility below Title V thresholds.

3. Facility Emissions and Attainment Status:

Vertis is located in Franklin County which is currently non-attainment for ozone and PM. For all other criteria air pollutants, Franklin County is attainment. Currently, Vertis Inc. operates under synthetic minor PTI No. 01-01303 which restricts facility-wide emissions to 99.0 tons per year of VOC, 9.9 tons per year of HAP, and 24.9 tons per year of HAPs. Emissions are based on the usage of heatset ink, fountain solution, and blanket wash. The potential to emit for the facility without synthetic minor restrictions would be 245.9 TPY VOC\*, 13.3 TPY HAP\*, and 31.7 TPY HAPs\*. The federally enforceable restrictions in this permit will limit emission to 98.8 TPY VOC, 5.9 TPY HAP, and 12.1 TPY HAPs (see attached calculations for more details).

*\*For use in calculating the facility and source emissions the maximum ink, fountain solution, and blanket wash usage, in lbs or gal, was provided by the company. The short term maximum usage for each press was determined assuming maximum coverage on the widest web by each printing unit. This provides a lb/hr emission rate that far exceeds the actual emissions and is virtually impossible for the units to exceed. The long term maximum press usage of inks, fountain solution, and blanket wash, in lbs or gal, were provided by the company. They are less than the short term multiplied by 8760 hr/yr, however they are more than double the maximum used and emitted by any press in the country owned by the applicant. In addition, many factors were considered including ink coverage (typically 10-70%), speed of press, web width, ratio of dry time to ink usage (more ink = slower dry time), that plates must be changed periodically, paper breaks, cleaning time of ink piling, product changes and order changes. Each of these factors was considered and the annual usage and emission rates were considered to be the absolute maximum for each unit.*

4. Source Emissions:

K001, K002, K003, K006, K008, K010, and K011 will be subject to short and long term emission limitations based on the unit's maximum potential to emit\*. Additionally, emissions from each press will be restricted

through facility-wide emission limitations on VOC, HAP, and combined HAPs. Emission limitations will be enforced through a 95% minimum destruction efficiency on the two associated RTOs and facility-wide

restrictions on ink, fountain solution, and blanket wash. For a detailed description of the source emission calculations see the attached file, a

summary follows:

Inks-

Maximum heatset ink VOC content = 43% (PTI Application 12/02/08)  
Retention in web = 20% (Ohio EPA, Eng. Guide No. 56)

Fountain Solution (fs)-

Maximum fs VOC content = 0.99 lbs/gal (PTI Application 12/02/08)  
Capture efficiency (to stack) = 70% (Ohio EPA, Eng. Guide No. 56)  
Capture efficiency (fugitive) = 30% (Ohio EPA, Eng. Guide No. 56)

Blanket Wash (bw) (Manual and Automatic)-

Manual bw VOC content = 2.13 lbs/gal (PTI Application 12/02/08)  
Automatic bw VOC content = 2.13 lbs/gal (PTI Application 12/02/08)  
Manual bw fugitive emissions = 50% (Ohio EPA, Eng. Guide No. 56)  
Automatic bw (to stack) = 40% (Ohio EPA, Eng. Guide No. 56)  
Automatic bw (fugitive) = 60% (Ohio EPA, Eng. Guide No. 56)

Minimum Control Efficiency = 95% (RTOs – verified by Stack test 12/07/07)

Maximum Potential to Emit (K001 and K002) = **35.64 lbs/hr VOC; 25.9 tons/yr VOC**

Maximum Potential to Emit (K003) = **24.57 lbs/hr VOC; 32.7 tons/yr VOC**

Maximum Potential to Emit (K006) = **20.53 lbs/hr VOC; 25.9 tons/yr VOC**

Maximum Potential to Emit (K008, K010, and K011) = **27.09 lbs/hr VOC; 32.7 tons/yr VOC**

**Air Toxics:**

The completion of this project will result in a net reduction in the emission of air toxics. The use of new materials will result in the elimination of naphthalene emissions and the addition of xylene and cumene emissions. The facility-wide emissions of xylene and cumene will be less than one ton per year (0.57 TPY and 0.24 TPY respectively). Therefore, per Ohio EPA Eng. Guide No. 69, air toxics modeling is not necessary. Modeling conducted during previous permitting events will be sufficient to ensure compliance with Ohio air toxics rules.

5. Conclusion:

This permitting action will result in the following changes to Vertis Inc.'s current synthetic minor PTI (No. 01-1303):

- removal of emissions units K004, K007, K009;
- the inclusion of K012 in the federally enforceable emission limitations and material usage limitations;
- removal of reference to coldset ink and coldset fountain solution;
- increasing heatset ink, fountain wash solution, automatic blanket wash, and manual blanket wash usage restrictions from 7,000,000 lbs, 10,000 gallons, 6,000 gallons, and 8,000 gallons to 8,162,500 lbs, 71,700 gallons, 7,850 gallons, and 12,500 gallons respectively;
- lowering the restrictions on the VOC content of heatset fountain solution and blanket wash from 1.2 lbs/gal and 5.4 lbs/gal to 0.99 lbs/gal and 2.17lbs/gal respectively;
- changing the individual VOC emission limitations from 48.0 lbs/hr and 34.7 tons/yr for K001 and K002, 41.0 lbs/hr and 51.5 tons/yr for K003, 31.0 lbs/hr and 35.0 tons/yr for K006, and 44.0 lbs/yr and 51.5

- tons/yr for K008, K010, and K011 to match the maximum potentials listed in the above calculations;
- removal of BAT and OAC 3745-17-11 PM restrictions;
- updated air toxics language; and
- an update to FEPTIO formatting and reporting requirements.

The proposed changes will be initiated while maintaining the facilities existing federally enforceable emission limitations. The federally enforceable restrictions and limitations in this permit will sufficiently assure the facility does not trigger Title V permitting requirements. Specifically, the ink, fountain solution, and blanket wash limitations coupled with the DRE of 95% or greater on the RTOs will maintain emissions at the facility to less than 99.0 tons VOC, 9.0 tons HAP and 24.9 tons of HAPs per rolling 12-month period after the installation of K012.

6. Please provide additional notes or comments as necessary:

None

7. Total Permit Allowable Emissions Summary (for informational purposes only):

<u>Pollutant</u>	<u>Tons Per Year</u>
VOC	99.0
HAPs	24.9
HAP	9.9



PUBLIC NOTICE  
Issuance of Draft Air Pollution Permit-To-Install and Operate  
VERTIS INC

Issue Date: 1/5/2009  
Permit Number: P0104236  
Permit Type: OAC Chapter 3745-31 Modification  
Permit Description: Chapter 31 modification of PTI No. 01-01303  
Facility ID: 0125041807  
Facility Location: VERTIS INC  
4051 FONDORF DR,  
COLUMBUS, OH 43228  
Facility Description: Commercial Lithographic Printing

Chris Korleski, Director of the Ohio Environmental Protection Agency, 50 West Town Street, Columbus Ohio has issued a draft action of an air pollution control, federally enforceable permit-to-install and operate (PTIO) for the facility at the location identified above on the date indicated. Comments concerning this draft action, or a request for a public meeting, must be sent in writing no later than thirty (30) days from the date this notice is published. All comments, questions, requests for permit applications or other pertinent documentation, and correspondence concerning this action must be directed to Richard Lindstrom at Ohio EPA DAPC, Central District Office, 50 West Town Street, 6th Floor P.O. Box 1049 or (614)728-3778. The permit can be downloaded from the Web page: [www.epa.state.oh.us/dapc](http://www.epa.state.oh.us/dapc)





**State of Ohio Environmental Protection Agency  
Division of Air Pollution Control**

**DRAFT**

**Air Pollution Permit-to-Install and Operate  
for  
VERTIS INC**

Facility ID: 0125041807  
Permit Number: P0104236  
Permit Type: OAC Chapter 3745-31 Modification  
Issued: 1/5/2009  
Effective: To be entered upon final issuance  
Expiration: To be entered upon final issuance





**Air Pollution Permit-to-Install and Operate**  
for  
VERTIS INC

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State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

**Permit Number:** P0104236

**Facility ID:** 0125041807

**Effective Date:** To be entered upon final issuance

# Authorization

Facility ID: 0125041807  
Application Number(s): A0036472  
Permit Number: P0104236  
Permit Description: Chapter 31 modification of PTI No. 01-01303  
Permit Type: OAC Chapter 3745-31 Modification  
Permit Fee: \$1,400.00 *DO NOT send payment at this time - subject to change before final issuance*  
Issue Date: 1/5/2009  
Effective Date: To be entered upon final issuance  
Expiration Date: To be entered upon final issuance  
Permit Evaluation Report (PER) Annual Date: To be entered upon final issuance

This document constitutes issuance to:

VERTIS INC  
4051 FONDORF DR  
COLUMBUS, OH 43228

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

Ohio EPA District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Central District Office  
50 West Town Street, 6th Floor  
P.O. Box 1049  
Columbus, OH 43216-1049  
(614)728-3778

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and Federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Chris Korleski  
Director



## Authorization (continued)

Permit Number: P0104236  
Permit Description: Chapter 31 modification of PTI No. 01-01303

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

**Emissions Unit ID: K003**  
Company Equipment ID: 904  
Superseded Permit Number: 01-01303  
General Permit Category and Type: Not Applicable

**Emissions Unit ID: K006**  
Company Equipment ID: 954-2  
Superseded Permit Number: 01-01303  
General Permit Category and Type: Not Applicable

**Group Name: K001/K002**

<b>Emissions Unit ID:</b>	<b>K001</b>
Company Equipment ID:	954-1
Superseded Permit Number:	01-01303
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K002</b>
Company Equipment ID:	908
Superseded Permit Number:	01-01303
General Permit Category and Type:	Not Applicable

**Group Name: K008/K010/K011**

<b>Emissions Unit ID:</b>	<b>K008</b>
Company Equipment ID:	701
Superseded Permit Number:	01-01303
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K010</b>
Company Equipment ID:	702
Superseded Permit Number:	01-01303
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>K011</b>
Company Equipment ID:	703
Superseded Permit Number:	01-01303
General Permit Category and Type:	Not Applicable



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

**Permit Number:** P0104236

**Facility ID:** 0125041807

**Effective Date:** To be entered upon final issuance

## **A. Standard Terms and Conditions**



**1. What does this permit-to-install and operate ("PTIO") allow me to do?**

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

**2. Who is responsible for complying with this permit?**

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

**3. What records must I keep under this permit?**

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

**4. What are my permit fees and when do I pay them?**

There are two fees associated with permitted air contaminant sources in Ohio:

- PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

- Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

**5. When does my PTIO expire, and when do I need to submit my renewal application?**

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is



very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

**6. What happens to this permit if my project is delayed or I do not install or modify my source?**

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

**7. What reports must I submit under this permit?**

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

**8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?**

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

**9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?**

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.



**10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?**

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the Ohio EPA DAPC, Central District Office in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

**11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?**

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

**12. What happens if one or more emissions units operated under this permit is/are shut down permanently?**

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emission unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

**13. Can I transfer this permit to a new owner or operator?**

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

**Permit Number:** P0104236

**Facility ID:** 0125041807

**Effective Date:** To be entered upon final issuance

**14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?**

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

**15. What happens if a portion of this permit is determined to be invalid?**

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

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## **B. Facility-Wide Terms and Conditions**



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

**Permit Number:** P0104236

**Facility ID:** 0125041807

**Effective Date:** To be entered upon final issuance

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
  - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
    - (1) None.
  - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
    - (1) None.



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

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## **C. Emissions Unit Terms and Conditions**



**1. K003, 904**

**Operations, Property and/or Equipment Description:**

4-Unit Harris N900 heatset web offset lithographic printing press (904) and dyer controlled by two Langbein-Engelbracht 20,000 acfm regenerative thermal oxidizers (RTOs) operating in tandem.

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

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. d)(5) thru (8) and e)(3)

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)b., c)(1-4), d)(1), (3) & (4), e)(1) and f)(1)c. thru f.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Emissions shall not exceed:  24.57 lbs/hr and 32.7 tons/yr of volatile organic compounds (VOC) from printing operations.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).  See Sections b)(2)a. and c)(3) below.
b.	OAC rule 3745-31-05(D) (synthetic minor to avoid Title V)	Total VOC emissions shall not exceed 99.0 tons per year from emissions units K001, K002, K003, K006, K008, K010, K011, and K012 combined as a rolling, 12-month summation.  The combined total hazardous air pollutants (HAP) emissions shall not



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		exceed 9.9 tons per rolling 12-month period for any single HAP and 24.9 tons per rolling 12-month period for all HAPs from all coating and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.  See Sections c)(1), (2), and (4) below.
c.	OAC rule 3745-21-07(G)(1)	The emission limitation and/or control requirements specified in this rule are less stringent than the emission limitations and/or control requirements established pursuant to OAC rule 3745-31-05(D).
d.	OAC rule 3745-21-07(G)(2)	The emission limitation and/or control requirements specified in this rule are less stringent than the emission limitations and/or control requirements established pursuant to OAC rule 3745-31-05(D).
e.	OAC rule 3745-21-07(G)(6)(a)	The limitation specified in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(D).

(2) Additional Terms and Conditions

- a. The hourly VOC emission limitation was established to reflect the potential to emit for this emissions unit after control. The emissions from this emissions unit are controlled with a thermal afterburner. Therefore, no additional monitoring, record keeping and/or reporting other than the parametric monitoring of the RTOs is necessary to ensure compliance with these limits.

[3745-31-05(A)(3)]

c) Operational Restrictions

- (1) The following annual usage limitations shall not be exceeded for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined, based upon a rolling, 12-month summation.

Material:	Limitation:
Heatset ink	8,162,500 pounds
Heatset Fountain Solution	71,700 gallons
Automatic Blanket Wash	7,850 gallons
Manual Blanket Wash	12,500 gallons



A table delineating the usage during the first 12 months is not necessary because records have been submitted to the Ohio EPA, Central District Office (CDO) which demonstrate past compliance with these limitations.

[3745-31-05(D)]

- (2) Emission units K001, K002, K003, K006, K008, K010, K011, and K012 shall not use a heat-set ink with a VOC content greater than 43% by weight, a fountain solution with a VOC content greater than 0.99 lbs/gal, or a blanket wash (manual or automatic) with a VOC content greater than 2.17 lbs/gal.

Ink means a liquid material applied by a roll printer. Fountain solution means a concentrated additive, diluted with water and applied to a lithographic plate to render the non-image areas unreceptive to ink. Blanket wash means all materials used to remove excess printing inks, oils and paper components from press equipment.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (3) The average combustion temperature within the RTOs for any 3-hour block of time when the emissions unit is in operation, shall not be less than 1400 degrees Fahrenheit.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (4) Emissions from this emissions unit shall be vented to a RTO with a destruction removal efficiency (DRE) of at least 95%.

[3745-31-05(D)] and [3745-31-05(A)(3)]

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain monthly records of the following information:
  - a. the company identification for each ink, fountain solution and blanket wash employed;
  - b. the number of pounds of each heatset ink employed for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined;
  - c. the number of gallons of each heatset fountain solution, automatic blanket wash and manual blanket wash employed for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined;
  - d. the VOC content of each ink, in percent by weight;
  - e. the HAP content of each ink, in percent by weight;
  - f. the combined HAP content of each ink, in percent by weight;
  - g. the VOC content of each fountain solution and blanket wash, in pounds per gallon;
  - h. the individual HAP content of each fountain solution and blanket wash, in pounds per gallon;



- i. the combined HAP content of each fountain solution and blanket wash, in pounds per gallon;
- j. the RTOs DRE (%), as demonstrated during the most recent DRE test which demonstrated compliance;
- k. the total monthly VOC, single HAP and combined HAPs emission rate for all inks, fountain solutions and blanket washes, in pounds and tons, using the following equations;

VOC from heatset inks:  $[b \times d \times \text{substrate retention factor (1.0-0.20)} \times (1.0-j)]$   
 VOC from heatset captured fountain solution:  $[c \times g \times \text{cap. eff. (1-0.30)} \times (1.0-j)]$   
 VOC from heatset fugitive fountain solution:  $[c \times g \times \text{fug. (1-0.70)}]$   
 VOC from captured automatic blanket wash:  $[c \times g \times \text{cap. eff. (1-0.6)} \times (1.0-j)]$   
 VOC from fugitive automatic blanket wash:  $[c \times g \times \text{fug. (1-0.4)}]$   
 VOC from manual blanket wash:  $[c \times g \times \text{retention factor (1.0-0.5)}]$   
 HAP from heatset inks:  $[b \times e \times \text{substrate retention factor (1.0-0.20)} \times (1.0-j)]$   
 HAP from heatset captured fountain solution:  $[c \times h \times \text{cap. eff. (1-0.30)} \times (1.0-j)]$   
 HAP from heatset fugitive fountain solution:  $[c \times h \times \text{fug. (1-0.70)}]$   
 HAP from captured automatic blanket wash:  $[c \times h \times \text{cap. eff. (1-0.6)} \times (1.0-j)]$   
 HAP from fugitive automatic blanket wash:  $[c \times h \times \text{fug. (1-0.4)}]$   
 HAP from manual blanket wash:  $[c \times h \times \text{retention factor (1.0-0.5)}]$   
 HAPs from heatset inks:  $[b \times f \times \text{substrate retention factor (1.0-0.20)} \times (1.0-j)]$   
 HAPs from heatset captured fountain solution:  $[c \times i \times \text{cap. eff. (1-0.30)} \times (1.0-j)]$   
 HAPs from heatset fugitive fountain solution:  $[c \times i \times \text{fug. (1-0.70)}]$   
 HAPs from captured automatic blanket wash:  $[c \times i \times \text{cap. eff. (1-0.6)} \times (1.0-j)]$   
 HAPs from fugitive automatic blanket wash:  $[c \times i \times \text{fug. (1-0.4)}]$   
 HAPs from manual blanket wash:  $[c \times i \times \text{retention factor (1.0-0.5)}]$

- l. the cumulative rolling, 12-month usage summation of total heatset inks (in pounds), heatset fountain solutions (in gallons), automatic blanket washes (in gallons) and manual blanket washes (in gallons), for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined; and
- m. the cumulative rolling, 12-month summation of the VOC, single HAP and combined HAPs emission rate for all inks, fountain solutions and blanket washes, in pounds and tons, determined by summing the previous 12-month VOC, single HAP and combined HAPs emission rates calculated in accordance with k.

[Note: The recorded information must be for the inks, fountain solutions and blanket washes as employed, including any thinning solvents added at the emissions unit.]

[3745-31-05(D)]

- (2) The permittee shall maintain for this facility all purchase orders and invoices of VOC-containing materials. The permittee shall retain such purchase orders and invoices for at least five years from their date of issuance. Upon request, the permittee shall make available to the Director of the Ohio EPA, or an authorized representative of the Director, such purchase orders and invoices for use in confirming the general accuracy of the records maintained and the reports submitted regarding material usage.

[3745-31-05(D)] and [3745-31-05(A)(3)]



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

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (4) The permittee shall collect and record the following information each day:
  - a. all 3-hour blocks of time during which the combustion temperature within the thermal incinerator, when the emissions unit was in operation, dropped below 1400 degrees Fahrenheit; and
  - b. a log of the downtime for the capture (collection) system, all control devices, and all monitoring equipment, when the associated emissions unit was in operation.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (5) The FEPTIO application for this/these emissions unit(s), K003, was evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The AToxic Air Contaminant Statute<sup>®</sup>, ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled AReview of New Sources of Air Toxic Emissions, Option A<sup>®</sup>, as follows:

- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
  - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists= (ACGIH) AThreshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices<sup>®</sup>; or
  - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists= (ACGIH) AThreshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices<sup>®</sup>; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.



- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e.,  $\Delta X$  hours per day and  $\Delta Y$  days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or  $\Delta$ worst case toxic contaminant(s):

Toxic Contaminant: Glycol Ether

TLV (mg/m3): 121

Maximum Hourly Emission Rate (lbs/hr): **1.407**

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): **61.4**

MAGLC (ug/m3): 2881

The permittee, has demonstrated that emissions of naphthalene and glycol ether, from emissions unit(s) K012, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the  $\Delta$ Toxic Air Contaminant Statute, ORC 3704.03(F).

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

- (6) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:
  - a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
  - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
  - c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the  $\Delta$ Toxic Air Contaminant Statute will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the  $\Delta$ Toxic Air Contaminant Statute, ORC



3704.03(F), has been documented. If the change(s) meet(s) the definition of a “modification”, the permittee shall apply for and obtain a final FEPTIO prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

(7) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the AToxic Air Contaminant Statute<sup>o</sup>, ORC 3704.03(F):

- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
- b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the AToxic Air Contaminant Statute<sup>o</sup>, ORC 3704.03(F);
- c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the AToxic Air Contaminant Statute<sup>o</sup>, ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
- d. the documentation of the initial evaluation of compliance with the AToxic Air Contaminant Statute<sup>o</sup>, ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

(8) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the AToxic Air Contaminant Statute<sup>o</sup>, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

e) Reporting Requirements

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

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:



- i. all exceedances of the rolling, 12-month VOC, single HAP and combined HAPs emission limitations for emission units K001, K002, K003, K006, K008, K010, K011, and K012;
  - ii. all exceedances of the rolling, 12-month summation of inks, fountain solutions and blanket washes for emission units K001, K002, K003, K006, K008, K010, K011, and K012; and
  - iii. all exceedances of the VOC content limitations for ink, in percent by weight, fountain solution and blanket wash, in pounds per gallon;
  - iv. all 3-hour blocks of times during which the average combustion temperature within the thermal afterburner does not comply with the temperature limitation specified above; and
  - v. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emission unit was in operation.
- b. the probable cause of each deviation (excursion);
  - c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
  - d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

[OAC rule 3745-15-03(B)(1)(b)] and [OAC rule 3745-15-03(C)]

- (2) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

[OAC rule 3745-15-03(B)(2)] and [OAC rule 3745-15-03(D)]

- (3) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the quarterly deviation (excursion) reports. If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.



[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

f) Testing Requirements

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

a. Emission Limitation:  
VOC emissions shall not exceed 24.57 lbs/hr.

Applicable Compliance Method:

Compliance shall be demonstrated by summing the ink, fountain solution and blanket wash emissions. The ink emissions shall be determined by multiplying the maximum ink usage of 600 lbs/hr by the maximum VOC content of 43% by weight, by the substrate retention factor (1.0-0.20)\* and by the minimum destruction efficiency (1.0-0.95)\*\*.

The hourly captured fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 60 gal/hr by the maximum VOC content of 0.99 lbs/gal by the capture efficiency (1-0.30)\* and by the minimum destruction efficiency (1.0-0.95)\*\*. The fugitive fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 60 gal/hr by the maximum VOC content of 0.99 lbs/gal by the fugitive amount (1-0.70)\*.

The hourly manual blanket wash emissions shall be determined by multiplying the maximum manual blanket wash usage of 5 gal/hr by the maximum VOC content of 2.17 lbs/gal and by the shop towels retention factor (1.0-0.50)\*.

The hourly captured automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 3 gal/hr by the maximum VOC content of 2.17 lbs/gal by the capture efficiency (1.0-0.6)\* and by the minimum destruction efficiency (1.0-0.95). The fugitive automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 3 gal/hr by the maximum VOC content of 2.17 lbs/gal and by the fugitive emissions (1.0-0.4)\*.

\* Ohio EPA, Eng. Guide No. 56, June 15, 1999.

\*\* Stack test data from test performed December 5, 2007.

b. Emission Limitation:  
VOC emissions shall not exceed 32.7 tons/yr.

Applicable Compliance Method:

Compliance shall be demonstrated by summing the ink, fountain solution and blanket wash emissions. The ink emissions shall be determined by multiplying the maximum ink usage of 2,000,000 lbs/yr by the maximum VOC content of 43% by weight, by the substrate retention factor (1.0-0.20)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton.

The annual captured fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 20,000 gal/yr by the



maximum VOC content of 0.99 lbs/gal by the capture efficiency (1-0.30)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton. The fugitive fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 20,000 gal/yr by the maximum VOC content of 0.99 lbs/gal by the fugitive amount (1-0.70)\* and dividing by 2000 lbs/ton.

The annual manual blanket wash emissions shall be determined by multiplying the maximum manual blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the shop towels retention factor (1.0-0.50)\* and dividing by 2000 lbs/ton.

The annual captured automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the capture efficiency (1.0-0.6)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton. The fugitive automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the fugitive emissions (1.0-0.4)\* and dividing by 2000 lbs/ton.

\* *Ohio EPA, Eng. Guide No. 56, June 15, 1999.*

\*\* *Stack test data from test performed December 5, 2007.*

- c. **Emission Limitation:**  
Total VOC emissions from the facility shall not exceed 99.0 tons per year for emissions units K001, K002, K003, K006, K008, K010, K011, and K012 combined, as a rolling, 12-month summation.

**Applicable Compliance Method:**  
Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.

- d. **Emission Limitation:**  
The individual HAP emissions shall not exceed 9.9 tons per rolling 12-month period for all single HAP from all coatings and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.

**Applicable Compliance Method:**  
Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.

- e. **Emission Limitation:**  
The combined total HAPs emissions shall not exceed 24.9 tons per rolling 12-month period for all HAP from all coatings and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.

**Applicable Compliance Method:**  
Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

**Permit Number:** P0104236

**Facility ID:** 0125041807

**Effective Date:** To be entered upon final issuance

- f. Emission Limitation:  
Emissions from this emissions unit shall be vented to RTOs with a DRE of at least 95%.

**Applicable Compliance Method:**

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25 or 25A, as appropriate.

- g) Miscellaneous Requirements

- (1) None.



**2. K006, 954-2**

**Operations, Property and/or Equipment Description:**

4-unit Harris N954 heatset web offset lithographic printing press controlled by a Dual Dry integrated dryer/thermal afterburner.

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

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. d)(5) thru (8) and e)(3)

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)b., c)(1-4), d)(1), (3) & (4), e)(1) and f)(1)c. thru f.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Emissions shall not exceed:  20.53 lbs/hr and 25.9 tons/yr of volatile organic compounds (VOC) from printing operations.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).  See Sections b)(2)a. and c)(3) below.
b.	OAC rule 3745-31-05(D) (synthetic minor to avoid Title V)	Total VOC emissions shall not exceed 99.0 tons per year from emissions units K001, K002, K003, K006, K008, K010, K011, and K012 combined as a rolling, 12-month summation.  The combined total hazardous air pollutants (HAP) emissions shall not exceed 9.9 tons per rolling 12-month



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		period for any single HAP and 24.9 tons per rolling 12-month period for all HAPs from all coating and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.  See Sections c)(1), (2), and (4) below.
c.	OAC rule 3745-21-07(G)(1)	The emission limitation and/or control requirements specified in this rule are less stringent than the emission limitations and/or control requirements established pursuant to OAC rule 3745-31-05(D).
d.	OAC rule 3745-21-07(G)(2)	The emission limitation and/or control requirements specified in this rule are less stringent than the emission limitations and/or control requirements established pursuant to OAC rule 3745-31-05(D).
e.	OAC rule 3745-21-07(G)(6)(a)	The limitation specified in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(D).

(2) Additional Terms and Conditions

- a. The hourly VOC emission limitation was established to reflect the potential to emit for this emissions unit after control. The emissions from this emissions unit are controlled with a thermal afterburner. Therefore, no additional monitoring, record keeping and/or reporting other than the parametric monitoring of the thermal afterburner is necessary to ensure compliance with these limits.

[3745-31-05(A)(3)]

c) Operational Restrictions

- (1) The following annual usage limitations shall not be exceeded for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined, based upon a rolling, 12-month summation.

Material:	Limitation:
Heatset ink	8,162,500 pounds
Heatset Fountain Solution	71,700 gallons
Automatic Blanket Wash	7,850 gallons
Manual Blanket Wash	12,500 gallons



A table delineating the usage during the first 12 months is not necessary because records have been submitted to the Ohio EPA, Central District Office (CDO) which demonstrate past compliance with these limitations.

[3745-31-05(D)]

- (2) Emission units K001, K002, K003, K006, K008, K010, K011, and K012 shall not use a heat-set ink with a VOC content greater than 43% by weight, a fountain solution with a VOC content greater than 0.99 lbs/gal, or a blanket wash (manual or automatic) with a VOC content greater than 2.17 lbs/gal.

Ink means a liquid material applied by a roll printer. Fountain solution means a concentrated additive, diluted with water and applied to a lithographic plate to render the non-image areas unreceptive to ink. Blanket wash means all materials used to remove excess printing inks, oils and paper components from press equipment.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (3) The average combustion temperature within the thermal afterburner for any 3-hour block of time when the emissions unit is in operation, shall not be less than 1400 degrees Fahrenheit.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (4) Emissions from this emissions unit shall be vented to a thermal afterburner with a destruction removal efficiency (DRE) of at least 95%.

[3745-31-05(D)] and [3745-31-05(A)(3)]

d) **Monitoring and/or Recordkeeping Requirements**

- (1) The permittee shall maintain monthly records of the following information:
  - a. the company identification for each ink, fountain solution and blanket wash employed;
  - b. the number of pounds of each heatset ink employed for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined;
  - c. the number of gallons of each heatset fountain solution, automatic blanket wash and manual blanket wash employed for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined;
  - d. the VOC content of each ink, in percent by weight;
  - e. the HAP content of each ink, in percent by weight;
  - f. the combined HAP content of each ink, in percent by weight;
  - g. the VOC content of each fountain solution and blanket wash, in pounds per gallon;



- h. the individual HAP content of each fountain solution and blanket wash, in pounds per gallon;
- i. the combined HAP content of each fountain solution and blanket wash, in pounds per gallon;
- j. the thermal afterburner DRE (%), as demonstrated during the most recent DRE test which demonstrated compliance;
- k. the total monthly VOC, single HAP and combined HAPs emission rate for all inks, fountain solutions and blanket washes, in pounds and tons, using the following equations;

VOC from heatset inks:  $[b \times d \times \text{substrate retention factor } (1.0-0.20) \times (1.0-j)]$   
 VOC from heatset captured fountain solution:  $[c \times g \times \text{cap. eff. } (1-0.30) \times (1.0-j)]$   
 VOC from heatset fugitive fountain solution:  $[c \times g \times \text{fug. } (1-0.70)]$   
 VOC from captured automatic blanket wash:  $[c \times g \times \text{cap. eff. } (1-0.6) \times (1.0-j)]$   
 VOC from fugitive automatic blanket wash:  $[c \times g \times \text{fug. } (1-0.4)]$   
 VOC from manual blanket wash:  $[c \times g \times \text{retention factor } (1.0-0.5)]$   
 HAP from heatset inks:  $[b \times e \times \text{substrate retention factor } (1.0-0.20) \times (1.0-j)]$   
 HAP from heatset captured fountain solution:  $[c \times h \times \text{cap. eff. } (1-0.30) \times (1.0-j)]$   
 HAP from heatset fugitive fountain solution:  $[c \times h \times \text{fug. } (1-0.70)]$   
 HAP from captured automatic blanket wash:  $[c \times h \times \text{cap. eff. } (1-0.6) \times (1.0-j)]$   
 HAP from fugitive automatic blanket wash:  $[c \times h \times \text{fug. } (1-0.4)]$   
 HAP from manual blanket wash:  $[c \times h \times \text{retention factor } (1.0-0.5)]$   
 HAPs from heatset inks:  $[b \times f \times \text{substrate retention factor } (1.0-0.20) \times (1.0-j)]$   
 HAPs from heatset captured fountain solution:  $[c \times i \times \text{cap. eff. } (1-0.30) \times (1.0-j)]$   
 HAPs from heatset fugitive fountain solution:  $[c \times i \times \text{fug. } (1-0.70)]$   
 HAPs from captured automatic blanket wash:  $[c \times i \times \text{cap. eff. } (1-0.6) \times (1.0-j)]$   
 HAPs from fugitive automatic blanket wash:  $[c \times i \times \text{fug. } (1-0.4)]$   
 HAPs from manual blanket wash:  $[c \times i \times \text{retention factor } (1.0-0.5)]$

- l. the cumulative rolling, 12-month usage summation of total heatset inks (in pounds), heatset fountain solutions (in gallons), automatic blanket washes (in gallons) and manual blanket washes (in gallons), for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined; and
- m. the cumulative rolling, 12-month summation of the VOC, single HAP and combined HAPs emission rate for all inks, fountain solutions and blanket washes, in pounds and tons, determined by summing the previous 12-month VOC, single HAP and combined HAPs emission rates calculated in accordance with k.

[Note: The recorded information must be for the inks, fountain solutions and blanket washes as employed, including any thinning solvents added at the emissions unit.]

[3745-31-05(D)]

- (2) The permittee shall maintain for this facility all purchase orders and invoices of VOC-containing materials. The permittee shall retain such purchase orders and invoices for at least five years from their date of issuance. Upon request, the permittee shall make available to the Director of the Ohio EPA, or an authorized representative of the Director,



such purchase orders and invoices for use in confirming the general accuracy of the records maintained and the reports submitted regarding material usage.

[3745-31-05(D)] and [3745-31-05(A)(3)]

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

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (4) The permittee shall collect and record the following information each day:
  - a. all 3-hour blocks of time during which the combustion temperature within the thermal incinerator, when the emissions unit was in operation, dropped below 1400 degrees Fahrenheit; and
  - b. a log of the downtime for the capture (collection) system, all control devices, and all monitoring equipment, when the associated emissions unit was in operation.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (5) The FEPTIO application for this/these emissions unit(s), K006, was evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The AToxic Air Contaminant Statute<sup>®</sup>, ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled AReview of New Sources of Air Toxic Emissions, Option A<sup>®</sup>, as follows:

- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
  - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists= (ACGIH) AThreshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices<sup>®</sup>; or



- ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists= (ACGIH) Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e.,  $X$  hours per day and  $Y$  days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or worst case toxic contaminant(s):

Toxic Contaminant: Glycol Ether  
 TLV (mg/m3): 121  
 Maximum Hourly Emission Rate (lbs/hr): **1.407**  
 Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): **61.4**  
 MAGLC (ug/m3): 2881

The permittee, has demonstrated that emissions of naphthalene and glycol ether, from emissions unit(s) K012, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the Toxic Air Contaminant Statute, ORC 3704.03(F). [ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

- (6) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:
  - a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
  - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and



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

If the permittee determines that the AToxic Air Contaminant Statute will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final FEPTIO prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

- (7) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F):

- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
- b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the AToxic Air Contaminant Statute, ORC 3704.03(F);
- c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
- d. the documentation of the initial evaluation of compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

- (8) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70



e) Reporting Requirements

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

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
  - i. all exceedances of the rolling, 12-month VOC, single HAP and combined HAPs emission limitations for emission units K001, K002, K003, K006, K008, K010, K011, and K012;
  - ii. all exceedances of the rolling, 12-month summation of inks, fountain solutions and blanket washes for emission units K001, K002, K003, K006, K008, K010, K011, and K012; and
  - iii. all exceedances of the VOC content limitations for ink, in percent by weight, fountain solution and blanket wash, in pounds per gallon;
  - iv. all 3-hour blocks of times during which the average combustion temperature within the thermal afterburner does not comply with the temperature limitation specified above; and
  - v. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emission unit was in operation.
- b. the probable cause of each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

[OAC rule 3745-15-03(B)(1)(b)] and [OAC rule 3745-15-03(C)]

(2) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.



[OAC rule 3745-15-03(B)(2)] and [OAC rule 3745-15-03(D)]

- (3) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the quarterly deviation (excursion) reports. If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

f) Testing Requirements

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

- a. Emission Limitation:  
VOC emissions shall not exceed 20.53 lbs/hr.

Applicable Compliance Method:

Compliance shall be demonstrated by summing the ink, fountain solution and blanket wash emissions. The ink emissions shall be determined by multiplying the maximum ink usage of 600 lbs/hr by the maximum VOC content of 43% by weight, by the substrate retention factor (1.0-0.20)\* and by the minimum destruction efficiency (1.0-0.95)\*\*.

The hourly captured fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 60 gal/hr by the maximum VOC content of 0.99 lbs/gal by the capture efficiency (1-0.30)\* and by the minimum destruction efficiency (1.0-0.95)\*\*. The fugitive fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 60 gal/hr by the maximum VOC content of 0.99 lbs/gal by the fugitive amount (1-0.70)\*.

The hourly manual blanket wash emissions shall be determined by multiplying the maximum manual blanket wash usage of 5 gal/hr by the maximum VOC content of 2.17 lbs/gal and by the shop towels retention factor (1.0-0.50)\*.

The hourly captured automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 3 gal/hr by the maximum VOC content of 2.17 lbs/gal by the capture efficiency (1.0-0.6)\* and by the minimum destruction efficiency (1.0-0.95). The fugitive automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 3 gal/hr by the maximum VOC content of 2.17 lbs/gal and by the fugitive emissions (1.0-0.4)\*.

\* Ohio EPA, Eng. Guide No. 56, June 15, 1999.

\*\* Stack test data from test performed December 5, 2007.

- b. Emission Limitation:  
VOC emissions shall not exceed 25.9 tons/yr.



**Applicable Compliance Method:**

Compliance shall be demonstrated by summing the ink, fountain solution and blanket wash emissions. The ink emissions shall be determined by multiplying the maximum ink usage of 2,000,000 lbs/yr by the maximum VOC content of 43% by weight, by the substrate retention factor (1.0-0.20)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton.

The annual captured fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 20,000 gal/yr by the maximum VOC content of 0.99 lbs/gal by the capture efficiency (1-0.30)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton. The fugitive fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 20,000 gal/yr by the maximum VOC content of 0.99 lbs/gal by the fugitive amount (1-0.70)\* and dividing by 2000 lbs/ton.

The annual manual blanket wash emissions shall be determined by multiplying the maximum manual blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the shop towels retention factor (1.0-0.50)\* and dividing by 2000 lbs/ton.

The annual captured automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the capture efficiency (1.0-0.6)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton. The fugitive automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the fugitive emissions (1.0-0.4)\* and dividing by 2000 lbs/ton.

\* *Ohio EPA, Eng. Guide No. 56, June 15, 1999.*

\*\* *Stack test data from test performed December 5, 2007.*

**c. Emission Limitation:**

Total VOC emissions from the facility shall not exceed 99.0 tons per year for emissions units K001, K002, K003, K006, K008, K010, K011, and K012 combined, as a rolling, 12-month summation.

**Applicable Compliance Method:**

Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.

**d. Emission Limitation:**

The individual HAP emissions shall not exceed 9.9 tons per rolling 12-month period for all single HAP from all coatings and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.

**Applicable Compliance Method:**

Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.



- e. Emission Limitation:  
The combined total HAPs emissions shall not exceed 24.9 tons per rolling 12-month period for all HAP from all coatings and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.

**Applicable Compliance Method:**

Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.

- f. Emission Limitation:  
Emissions from this emissions unit shall be vented to a thermal afterburner with a DRE of at least 95%.

**Applicable Compliance Method:**

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25 or 25A, as appropriate.

g) Miscellaneous Requirements

- (1) None.



**3. Emissions Unit Group - K001/K002: K001, K002,**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
K001	8 Unit Harris N954 heatset web offset lithographic printing press (954-1) and dryer controlled by two Langbein-Engelbracht 20,000 acfm regenerative thermal oxidizers (RTOs) operating in tandem.
K002	8-Unit Harris N900 heatset web offset lithographic printing press (908) and dryer controlled by two Langbein-Engelbracht 20,000 acfm regenerative thermal oxidizers (RTOs) operating in tandem.

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

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. d)(5) thru (8) and e)(3)

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)b., c)(1-4), d)(1), (3) & (4), e)(1) and f)(1)c. thru f.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Emissions shall not exceed:  35.64 lbs/hr and 25.9 tons/yr of volatile organic compounds (VOC) from printing operations.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).  See Sections b)(2)a. and c)(3) below.
b.	OAC rule 3745-31-05(D) (synthetic minor to avoid Title V)	Total VOC emissions shall not exceed 99.0 tons per year from emissions units K001, K002, K003, K006, K008, K010, K011, and K012 combined as a rolling, 12-month summation.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>The combined total hazardous air pollutants (HAP) emissions shall not exceed 9.9 tons per rolling 12-month period for any single HAP and 24.9 tons per rolling 12-month period for all HAPs from all coating and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.</p> <p>See Sections c)(1), (2), and (4) below.</p>
c.	OAC rule 3745-21-07(G)(1)	The emission limitation and/or control requirements specified in this rule are less stringent than the emission limitations and/or control requirements established pursuant to OAC rule 3745-31-05(D).
d.	OAC rule 3745-21-07(G)(2)	The emission limitation and/or control requirements specified in this rule are less stringent than the emission limitations and/or control requirements established pursuant to OAC rule 3745-31-05(D).
e.	OAC rule 3745-21-07(G)(6)(a)	The limitation specified in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(D).

(2) Additional Terms and Conditions

- a. The hourly VOC emission limitation was established to reflect the potential to emit for this emissions unit after control. The emissions from this emissions unit are controlled with a thermal afterburner. Therefore, no additional monitoring, record keeping and/or reporting other than the parametric monitoring of the RTOs is necessary to ensure compliance with these limits.

[3745-31-05(A)(3)]

c) Operational Restrictions

- (1) The following annual usage limitations shall not be exceeded for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined, based upon a rolling, 12-month summation.

Material:

Limitation:

Heatset ink  
Heatset Fountain Solution  
Automatic Blanket Wash

8,162,500 pounds  
71,700 gallons  
7,850 gallons



Manual Blanket Wash 12,500 gallons

A table delineating the usage during the first 12 months is not necessary because records have been submitted to the Ohio EPA, Central District Office (CDO) which demonstrate past compliance with these limitations.

[3745-31-05(D)]

- (2) Emission units K001, K002, K003, K006, K008, K010, K011, and K012 shall not use a heat-set ink with a VOC content greater than 43% by weight, a fountain solution with a VOC content greater than 0.99 lbs/gal, or a blanket wash (manual or automatic) with a VOC content greater than 2.17 lbs/gal.

Ink means a liquid material applied by a roll printer. Fountain solution means a concentrated additive, diluted with water and applied to a lithographic plate to render the non-image areas unreceptive to ink. Blanket wash means all materials used to remove excess printing inks, oils and paper components from press equipment.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (3) The average combustion temperature within the RTOs for any 3-hour block of time when the emissions unit is in operation, shall not be less than 1400 degrees Fahrenheit.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (4) Emissions from this emissions unit shall be vented to a RTO with a destruction removal efficiency (DRE) of at least 95%.

[3745-31-05(D)] and [3745-31-05(A)(3)]

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain monthly records of the following information:
  - a. the company identification for each ink, fountain solution and blanket wash employed;
  - b. the number of pounds of each heatset ink employed for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined;
  - c. the number of gallons of each heatset fountain solution, automatic blanket wash and manual blanket wash employed for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined;
  - d. the VOC content of each ink, in percent by weight;
  - e. the HAP content of each ink, in percent by weight;
  - f. the combined HAP content of each ink, in percent by weight;
  - g. the VOC content of each fountain solution and blanket wash, in pounds per gallon;



- h. the individual HAP content of each fountain solution and blanket wash, in pounds per gallon;
- i. the combined HAP content of each fountain solution and blanket wash, in pounds per gallon;
- j. the RTOs DRE (%), as demonstrated during the most recent DRE test which demonstrated compliance;
- k. the total monthly VOC, single HAP and combined HAPs emission rate for all inks, fountain solutions and blanket washes, in pounds and tons, using the following equations;

VOC from heatset inks:  $[b \times d \times \text{substrate retention factor } (1.0-0.20) \times (1.0-j)]$   
 VOC from heatset captured fountain solution:  $[c \times g \times \text{cap. eff. } (1-0.30) \times (1.0-j)]$   
 VOC from heatset fugitive fountain solution:  $[c \times g \times \text{fug. } (1-0.70)]$   
 VOC from captured automatic blanket wash:  $[c \times g \times \text{cap. eff. } (1-0.6) \times (1.0-j)]$   
 VOC from fugitive automatic blanket wash:  $[c \times g \times \text{fug. } (1-0.4)]$   
 VOC from manual blanket wash:  $[c \times g \times \text{retention factor } (1.0-0.5)]$   
 HAP from heatset inks:  $[b \times e \times \text{substrate retention factor } (1.0-0.20) \times (1.0-j)]$   
 HAP from heatset captured fountain solution:  $[c \times h \times \text{cap. eff. } (1-0.30) \times (1.0-j)]$   
 HAP from heatset fugitive fountain solution:  $[c \times h \times \text{fug. } (1-0.70)]$   
 HAP from captured automatic blanket wash:  $[c \times h \times \text{cap. eff. } (1-0.6) \times (1.0-j)]$   
 HAP from fugitive automatic blanket wash:  $[c \times h \times \text{fug. } (1-0.4)]$   
 HAP from manual blanket wash:  $[c \times h \times \text{retention factor } (1.0-0.5)]$   
 HAPs from heatset inks:  $[b \times f \times \text{substrate retention factor } (1.0-0.20) \times (1.0-j)]$   
 HAPs from heatset captured fountain solution:  $[c \times i \times \text{cap. eff. } (1-0.30) \times (1.0-j)]$   
 HAPs from heatset fugitive fountain solution:  $[c \times i \times \text{fug. } (1-0.70)]$   
 HAPs from captured automatic blanket wash:  $[c \times i \times \text{cap. eff. } (1-0.6) \times (1.0-j)]$   
 HAPs from fugitive automatic blanket wash:  $[c \times i \times \text{fug. } (1-0.4)]$   
 HAPs from manual blanket wash:  $[c \times i \times \text{retention factor } (1.0-0.5)]$

- l. the cumulative rolling, 12-month usage summation of total heatset inks (in pounds), heatset fountain solutions (in gallons), automatic blanket washes (in gallons) and manual blanket washes (in gallons), for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined; and
- m. the cumulative rolling, 12-month summation of the VOC, single HAP and combined HAPs emission rate for all inks, fountain solutions and blanket washes, in pounds and tons, determined by summing the previous 12-month VOC, single HAP and combined HAPs emission rates calculated in accordance with k.

[Note: The recorded information must be for the inks, fountain solutions and blanket washes as employed, including any thinning solvents added at the emissions unit.]

[3745-31-05(D)]

- (2) The permittee shall maintain for this facility all purchase orders and invoices of VOC-containing materials. The permittee shall retain such purchase orders and invoices for at least five years from their date of issuance. Upon request, the permittee shall make available to the Director of the Ohio EPA, or an authorized representative of the Director,



such purchase orders and invoices for use in confirming the general accuracy of the records maintained and the reports submitted regarding material usage.

[3745-31-05(D)] and [3745-31-05(A)(3)]

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

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (4) The permittee shall collect and record the following information each day:
- a. all 3-hour blocks of time during which the combustion temperature within the thermal incinerator, when the emissions unit was in operation, dropped below 1400 degrees Fahrenheit; and
  - b. a log of the downtime for the capture (collection) system, all control devices, and all monitoring equipment, when the associated emissions unit was in operation.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (5) The FEPTIO application for this/these emissions unit(s), K001 and K002, were evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The Toxic Air Contaminant Statute, ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled Review of New Sources of Air Toxic Emissions, Option A, as follows:

- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
  - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists= (ACGIH) Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices; or



- ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists= (ACGIH) Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e.,  $X$  hours per day and  $Y$  days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or worst case toxic contaminant(s):

Toxic Contaminant: Glycol Ether  
 TLV (mg/m3): 121  
 Maximum Hourly Emission Rate (lbs/hr): **1.407**  
 Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): **61.4**  
 MAGLC (ug/m3): 2881

The permittee, has demonstrated that emissions of naphthalene and glycol ether, from emissions unit(s) K012, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the Toxic Air Contaminant Statute, ORC 3704.03(F). [ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

- (6) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:
  - a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
  - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and



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

If the permittee determines that the AToxic Air Contaminant Statute will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final FEPTIO prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

- (7) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F):

- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
- b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the AToxic Air Contaminant Statute, ORC 3704.03(F);
- c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
- d. the documentation of the initial evaluation of compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

- (8) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70



e) Reporting Requirements

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

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
  - i. all exceedances of the rolling, 12-month VOC, single HAP and combined HAPs emission limitations for emission units K001, K002, K003, K006, K008, K010, K011, and K012;
  - ii. all exceedances of the rolling, 12-month summation of inks, fountain solutions and blanket washes for emission units K001, K002, K003, K006, K008, K010, K011, and K012; and
  - iii. all exceedances of the VOC content limitations for ink, in percent by weight, fountain solution and blanket wash, in pounds per gallon;
  - iv. all 3-hour blocks of times during which the average combustion temperature within the thermal afterburner does not comply with the temperature limitation specified above; and
  - v. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emission unit was in operation.
- b. the probable cause of each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

[OAC rule 3745-15-03(B)(1)(b)] and [OAC rule 3745-15-03(C)]

(2) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.



[OAC rule 3745-15-03(B)(2)] and [OAC rule 3745-15-03(D)]

- (3) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the quarterly deviation (excursion) reports. If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

f) Testing Requirements

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

- a. Emission Limitation:  
VOC emissions shall not exceed 35.64 lbs/hr.

Applicable Compliance Method:

Compliance shall be demonstrated by summing the ink, fountain solution and blanket wash emissions. The ink emissions shall be determined by multiplying the maximum ink usage of 600 lbs/hr by the maximum VOC content of 43% by weight, by the substrate retention factor (1.0-0.20)\* and by the minimum destruction efficiency (1.0-0.95)\*\*.

The hourly captured fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 60 gal/hr by the maximum VOC content of 0.99 lbs/gal by the capture efficiency (1-0.30)\* and by the minimum destruction efficiency (1.0-0.95)\*\*. The fugitive fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 60 gal/hr by the maximum VOC content of 0.99 lbs/gal by the fugitive amount (1-0.70)\*.

The hourly manual blanket wash emissions shall be determined by multiplying the maximum manual blanket wash usage of 5 gal/hr by the maximum VOC content of 2.17 lbs/gal and by the shop towels retention factor (1.0-0.50)\*.

The hourly captured automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 3 gal/hr by the maximum VOC content of 2.17 lbs/gal by the capture efficiency (1.0-0.6)\* and by the minimum destruction efficiency (1.0-0.95). The fugitive automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 3 gal/hr by the maximum VOC content of 2.17 lbs/gal and by the fugitive emissions (1.0-0.4)\*.

\* Ohio EPA, Eng. Guide No. 56, June 15, 1999.

\*\* Stack test data from test performed December 5, 2007.

- b. Emission Limitation:  
VOC emissions shall not exceed 25.9 tons/yr.



**Applicable Compliance Method:**

Compliance shall be demonstrated by summing the ink, fountain solution and blanket wash emissions. The ink emissions shall be determined by multiplying the maximum ink usage of 2,000,000 lbs/yr by the maximum VOC content of 43% by weight, by the substrate retention factor (1.0-0.20)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton.

The annual captured fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 20,000 gal/yr by the maximum VOC content of 0.99 lbs/gal by the capture efficiency (1-0.30)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton. The fugitive fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 20,000 gal/yr by the maximum VOC content of 0.99 lbs/gal by the fugitive amount (1-0.70)\* and dividing by 2000 lbs/ton.

The annual manual blanket wash emissions shall be determined by multiplying the maximum manual blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the shop towels retention factor (1.0-0.50)\* and dividing by 2000 lbs/ton.

The annual captured automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the capture efficiency (1.0-0.6)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton. The fugitive automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the fugitive emissions (1.0-0.4)\* and dividing by 2000 lbs/ton.

\* *Ohio EPA, Eng. Guide No. 56, June 15, 1999.*

\*\* *Stack test data from test performed December 5, 2007.*

**c. Emission Limitation:**

Total VOC emissions from the facility shall not exceed 99.0 tons per year for emissions units K001, K002, K003, K006, K008, K010, K011, and K012 combined, as a rolling, 12-month summation.

**Applicable Compliance Method:**

Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.

**d. Emission Limitation:**

The individual HAP emissions shall not exceed 9.9 tons per rolling 12-month period for all single HAP from all coatings and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.

**Applicable Compliance Method:**

Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.



- e. Emission Limitation:  
The combined total HAPs emissions shall not exceed 24.9 tons per rolling 12-month period for all HAP from all coatings and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.

**Applicable Compliance Method:**

Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.

- f. Emission Limitation:  
Emissions from this emissions unit shall be vented to RTOs with a DRE of at least 95%.

**Applicable Compliance Method:**

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25 or 25A, as appropriate.

g) Miscellaneous Requirements

- (1) None.



**4. Emissions Unit Group - K008/K010/K011: K008, K010, K011,**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
K008	4-unit Goss C700 heatset web offset lithographic printing press (701) and dryer controlled by two Langbein-Engelbracht 20,000 acfm regenerative thermal oxidizers (RTOs) operating in tandem.
K010	4-unit Goss C700 heatset web offset lithographic printing press and associated dryer controlled by two Langbein-Engelbracht 20,000 acfm regenerative thermal oxidizers (RTOs) operating in tandem.
K011	4- unit Goss C700 heatset web offset lithographic printing press and associated dryer controlled by two Langbein-Engelbracht 20,000 acfm regenerative thermal oxidizers (RTOs) operating in tandem.

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

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. d)(5) thru (8) and e)(3)

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)b., c)(1-4), d)(1), (3) & (4), e)(1) and f)(1)c. thru f.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Emissions shall not exceed:  27.09 lbs/hr and 32.7 tons/yr of volatile organic compounds (VOC) from printing operations.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D).  See Sections b)(2)a. and c)(3) below.
b.	OAC rule 3745-31-05(D) (synthetic minor to avoid Title V)	Total VOC emissions shall not exceed 99.0 tons per year from emissions units



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>K001, K002, K003, K006, K008, K010, K011, and K012 combined as a rolling, 12-month summation.</p> <p>The combined total hazardous air pollutants (HAP) emissions shall not exceed 9.9 tons per rolling 12-month period for any single HAP and 24.9 tons per rolling 12-month period for all HAPs from all coating and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.</p> <p>See Sections c)(1), (2), and (4) below.</p>
c.	OAC rule 3745-21-07(G)(1)	The emission limitation and/or control requirements specified in this rule are less stringent than the emission limitations and/or control requirements established pursuant to OAC rule 3745-31-05(D).
d.	OAC rule 3745-21-07(G)(2)	The emission limitation and/or control requirements specified in this rule are less stringent than the emission limitations and/or control requirements established pursuant to OAC rule 3745-31-05(D).
e.	OAC rule 3745-21-07(G)(6)(a)	The limitation specified in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(D).

(2) Additional Terms and Conditions

- a. The hourly VOC emission limitation was established to reflect the potential to emit for this emissions unit after control. The emissions from this emissions unit are controlled with a thermal afterburner. Therefore, no additional monitoring, record keeping and/or reporting other than the parametric monitoring of the RTOs is necessary to ensure compliance with these limits.

[3745-31-05(A)(3)]

c) Operational Restrictions

- (1) The following annual usage limitations shall not be exceeded for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined, based upon a rolling, 12-month summation.

Material:

Limitation:



Heatset ink	8,162,500 pounds
Heatset Fountain Solution	71,700 gallons
Automatic Blanket Wash	7,850 gallons
Manual Blanket Wash	12,500 gallons

A table delineating the usage during the first 12 months is not necessary because records have been submitted to the Ohio EPA, Central District Office (CDO) which demonstrate past compliance with these limitations.

[3745-31-05(D)]

- (2) Emission units K001, K002, K003, K006, K008, K010, K011, and K012 shall not use a heat-set ink with a VOC content greater than 43% by weight, a fountain solution with a VOC content greater than 0.99 lbs/gal, or a blanket wash (manual or automatic) with a VOC content greater than 2.17 lbs/gal.

Ink means a liquid material applied by a roll printer. Fountain solution means a concentrated additive, diluted with water and applied to a lithographic plate to render the non-image areas unreceptive to ink. Blanket wash means all materials used to remove excess printing inks, oils and paper components from press equipment.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (3) The average combustion temperature within the RTOs for any 3-hour block of time when the emissions unit is in operation, shall not be less than 1400 degrees Fahrenheit.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (4) Emissions from this emissions unit shall be vented to a RTO with a destruction removal efficiency (DRE) of at least 95%.

[3745-31-05(D)] and [3745-31-05(A)(3)]

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain monthly records of the following information:
  - a. the company identification for each ink, fountain solution and blanket wash employed;
  - b. the number of pounds of each heatset ink employed for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined;
  - c. the number of gallons of each heatset fountain solution, automatic blanket wash and manual blanket wash employed for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined;
  - d. the VOC content of each ink, in percent by weight;
  - e. the HAP content of each ink, in percent by weight;
  - f. the combined HAP content of each ink, in percent by weight;



- g. the VOC content of each fountain solution and blanket wash, in pounds per gallon;
- h. the individual HAP content of each fountain solution and blanket wash, in pounds per gallon;
- i. the combined HAP content of each fountain solution and blanket wash, in pounds per gallon;
- j. the RTOs DRE (%), as demonstrated during the most recent DRE test which demonstrated compliance;
- k. the total monthly VOC, single HAP and combined HAPs emission rate for all inks, fountain solutions and blanket washes, in pounds and tons, using the following equations;

VOC from heatset inks:  $[b \times d \times \text{substrate retention factor } (1.0-0.20) \times (1.0-j)]$   
 VOC from heatset captured fountain solution:  $[c \times g \times \text{cap. eff. } (1-0.30) \times (1.0-j)]$   
 VOC from heatset fugitive fountain solution:  $[c \times g \times \text{fug. } (1-0.70)]$   
 VOC from captured automatic blanket wash:  $[c \times g \times \text{cap. eff. } (1-0.6) \times (1.0-j)]$   
 VOC from fugitive automatic blanket wash:  $[c \times g \times \text{fug. } (1-0.4)]$   
 VOC from manual blanket wash:  $[c \times g \times \text{retention factor } (1.0-0.5)]$   
 HAP from heatset inks:  $[b \times e \times \text{substrate retention factor } (1.0-0.20) \times (1.0-j)]$   
 HAP from heatset captured fountain solution:  $[c \times h \times \text{cap. eff. } (1-0.30) \times (1.0-j)]$   
 HAP from heatset fugitive fountain solution:  $[c \times h \times \text{fug. } (1-0.70)]$   
 HAP from captured automatic blanket wash:  $[c \times h \times \text{cap. eff. } (1-0.6) \times (1.0-j)]$   
 HAP from fugitive automatic blanket wash:  $[c \times h \times \text{fug. } (1-0.4)]$   
 HAP from manual blanket wash:  $[c \times h \times \text{retention factor } (1.0-0.5)]$   
 HAPs from heatset inks:  $[b \times f \times \text{substrate retention factor } (1.0-0.20) \times (1.0-j)]$   
 HAPs from heatset captured fountain solution:  $[c \times i \times \text{cap. eff. } (1-0.30) \times (1.0-j)]$   
 HAPs from heatset fugitive fountain solution:  $[c \times i \times \text{fug. } (1-0.70)]$   
 HAPs from captured automatic blanket wash:  $[c \times i \times \text{cap. eff. } (1-0.6) \times (1.0-j)]$   
 HAPs from fugitive automatic blanket wash:  $[c \times i \times \text{fug. } (1-0.4)]$   
 HAPs from manual blanket wash:  $[c \times i \times \text{retention factor } (1.0-0.5)]$

- l. the cumulative rolling, 12-month usage summation of total heatset inks (in pounds), heatset fountain solutions (in gallons), automatic blanket washes (in gallons) and manual blanket washes (in gallons), for emission units K001, K002, K003, K006, K008, K010, K011, and K012 combined; and
- m. the cumulative rolling, 12-month summation of the VOC, single HAP and combined HAPs emission rate for all inks, fountain solutions and blanket washes, in pounds and tons, determined by summing the previous 12-month VOC, single HAP and combined HAPs emission rates calculated in accordance with k.

[Note: The recorded information must be for the inks, fountain solutions and blanket washes as employed, including any thinning solvents added at the emissions unit.]

[3745-31-05(D)]

- (2) The permittee shall maintain for this facility all purchase orders and invoices of VOC-containing materials. The permittee shall retain such purchase orders and invoices for



at least five years from their date of issuance. Upon request, the permittee shall make available to the Director of the Ohio EPA, or an authorized representative of the Director, such purchase orders and invoices for use in confirming the general accuracy of the records maintained and the reports submitted regarding material usage.

[3745-31-05(D)] and [3745-31-05(A)(3)]

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

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (4) The permittee shall collect and record the following information each day:
- a. all 3-hour blocks of time during which the combustion temperature within the thermal incinerator, when the emissions unit was in operation, dropped below 1400 degrees Fahrenheit; and
  - b. a log of the downtime for the capture (collection) system, all control devices, and all monitoring equipment, when the associated emissions unit was in operation.

[3745-31-05(D)] and [3745-31-05(A)(3)]

- (5) The FEPTIO application for this/these emissions unit(s), K001 and K002, were evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The AToxic Air Contaminant Statute<sup>®</sup>, ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled AReview of New Sources of Air Toxic Emissions, Option A<sup>®</sup>, as follows:

- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
  - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists<sup>®</sup> (ACGIH) AThreshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices<sup>®</sup>;
  - or



- ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists= (ACGIH) Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e.,  $X$  hours per day and  $Y$  days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or worst case toxic contaminant(s):

Toxic Contaminant: Glycol Ether  
 TLV (mg/m3): 121  
 Maximum Hourly Emission Rate (lbs/hr): **1.407**  
 Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): **61.4**  
 MAGLC (ug/m3): 2881

The permittee, has demonstrated that emissions of naphthalene and glycol ether, from emissions unit(s) K012, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the Toxic Air Contaminant Statute, ORC 3704.03(F). [ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

- (6) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:
  - a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
  - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and



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

If the permittee determines that the AToxic Air Contaminant Statute will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final FEPTIO prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

- (7) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F):

- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
- b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the AToxic Air Contaminant Statute, ORC 3704.03(F);
- c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
- d. the documentation of the initial evaluation of compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

- (8) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the AToxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70



e) Reporting Requirements

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

- a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the Potential to Emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:
  - i. all exceedances of the rolling, 12-month VOC, single HAP and combined HAPs emission limitations for emission units K001, K002, K003, K006, K008, K010, K011, and K012;
  - ii. all exceedances of the rolling, 12-month summation of inks, fountain solutions and blanket washes for emission units K001, K002, K003, K006, K008, K010, K011, and K012; and
  - iii. all exceedances of the VOC content limitations for ink, in percent by weight, fountain solution and blanket wash, in pounds per gallon;
  - iv. all 3-hour blocks of times during which the average combustion temperature within the thermal afterburner does not comply with the temperature limitation specified above; and
  - v. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emission unit was in operation.
- b. the probable cause of each deviation (excursion);
- c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and
- d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted (postmarked) each year by the thirty-first of January (covering October to December), the thirtieth of April (covering January to March), the thirty-first of July (covering April to June), and the thirty-first of October (covering July to September), unless an alternative schedule has been established and approved by the director (the appropriate district office or local air agency).

[OAC rule 3745-15-03(B)(1)(b)] and [OAC rule 3745-15-03(C)]

(2) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.



[OAC rule 3745-15-03(B)(2)] and [OAC rule 3745-15-03(D)]

- (3) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the quarterly deviation (excursion) reports. If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

f) Testing Requirements

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

- a. Emission Limitation:  
VOC emissions shall not exceed 27.09 lbs/hr.

Applicable Compliance Method:

Compliance shall be demonstrated by summing the ink, fountain solution and blanket wash emissions. The ink emissions shall be determined by multiplying the maximum ink usage of 600 lbs/hr by the maximum VOC content of 43% by weight, by the substrate retention factor (1.0-0.20)\* and by the minimum destruction efficiency (1.0-0.95)\*\*.

The hourly captured fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 60 gal/hr by the maximum VOC content of 0.99 lbs/gal by the capture efficiency (1-0.30)\* and by the minimum destruction efficiency (1.0-0.95)\*\*. The fugitive fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 60 gal/hr by the maximum VOC content of 0.99 lbs/gal by the fugitive amount (1-0.70)\*.

The hourly manual blanket wash emissions shall be determined by multiplying the maximum manual blanket wash usage of 5 gal/hr by the maximum VOC content of 2.17 lbs/gal and by the shop towels retention factor (1.0-0.50)\*.

The hourly captured automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 3 gal/hr by the maximum VOC content of 2.17 lbs/gal by the capture efficiency (1.0-0.6)\* and by the minimum destruction efficiency (1.0-0.95). The fugitive automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 3 gal/hr by the maximum VOC content of 2.17 lbs/gal and by the fugitive emissions (1.0-0.4)\*.

\* Ohio EPA, Eng. Guide No. 56, June 15, 1999.

\*\* Stack test data from test performed December 5, 2007.

- b. Emission Limitation:  
VOC emissions shall not exceed 32.7 tons/yr.



**Applicable Compliance Method:**

Compliance shall be demonstrated by summing the ink, fountain solution and blanket wash emissions. The ink emissions shall be determined by multiplying the maximum ink usage of 2,000,000 lbs/yr by the maximum VOC content of 43% by weight, by the substrate retention factor (1.0-0.20)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton.

The annual captured fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 20,000 gal/yr by the maximum VOC content of 0.99 lbs/gal by the capture efficiency (1-0.30)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton. The fugitive fountain solution emissions shall be determined by multiplying the maximum fountain solution usage of 20,000 gal/yr by the maximum VOC content of 0.99 lbs/gal by the fugitive amount (1-0.70)\* and dividing by 2000 lbs/ton.

The annual manual blanket wash emissions shall be determined by multiplying the maximum manual blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the shop towels retention factor (1.0-0.50)\* and dividing by 2000 lbs/ton.

The annual captured automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the capture efficiency (1.0-0.6)\* by the minimum destruction efficiency (1.0-0.95)\*\* and dividing by 2000 lbs/ton. The fugitive automatic blanket wash emissions shall be determined by multiplying the maximum automatic blanket wash usage of 10,000 gal/yr by the maximum VOC content of 2.17 lbs/gal by the fugitive emissions (1.0-0.4)\* and dividing by 2000 lbs/ton.

\* *Ohio EPA, Eng. Guide No. 56, June 15, 1999.*

\*\* *Stack test data from test performed December 5, 2007.*

**c. Emission Limitation:**

Total VOC emissions from the facility shall not exceed 99.0 tons per year for emissions units K001, K002, K003, K006, K008, K010, K011, and K012 combined, as a rolling, 12-month summation.

**Applicable Compliance Method:**

Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.

**d. Emission Limitation:**

The individual HAP emissions shall not exceed 9.9 tons per rolling 12-month period for all single HAP from all coatings and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.

**Applicable Compliance Method:**

Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.



- e. Emission Limitation:  
The combined total HAPs emissions shall not exceed 24.9 tons per rolling 12-month period for all HAP from all coatings and cleanup materials used in units K001, K002, K003, K006, K008, K010, K011, and K012 combined.

**Applicable Compliance Method:**

Compliance shall be based upon the record keeping requirements specified in Section d)(1) of this permit.

- f. Emission Limitation:  
Emissions from this emissions unit shall be vented to RTOs with a DRE of at least 95%.

**Applicable Compliance Method:**

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25 or 25A, as appropriate.

g) Miscellaneous Requirements

- (1) None.