



11/14/2014

Certified Mail

Phil Carlile
CUSTOM POLY BAG COMPANY
9465 EDISON STREET NE
Alliance, OH 44601

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
Yes	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MODELING SUBMITTED
No	SYNTHETIC MINOR TO AVOID TITLE V
No	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 1576011543
Permit Number: P0117546
Permit Type: OAC Chapter 3745-31 Modification
County: Stark

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

How to appeal this permit

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

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Canton City Health Department at (330)489-3385 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Erica R. Engel-Ishida, Manager
Permit Issuance and Data Management Section, DAPC

Cc: Canton



FINAL

**Division of Air Pollution Control
Permit-to-Install and Operate
for
CUSTOM POLY BAG COMPANY**

Facility ID:	1576011543
Permit Number:	P0117546
Permit Type:	OAC Chapter 3745-31 Modification
Issued:	11/14/2014
Effective:	11/14/2014
Expiration:	6/6/2016



Division of Air Pollution Control
Permit-to-Install and Operate
for
CUSTOM POLY BAG COMPANY

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Final Permit-to-Install and Operate
CUSTOM POLY BAG COMPANY
Permit Number: P0117546
Facility ID: 1576011543
Effective Date: 11/14/2014

Authorization

Facility ID: 1576011543
Application Number(s): A0050590
Permit Number: P0117546
Permit Description: Chapter 31 Modification to PTIO P0105587 issued on 08/06/11 to remove the synthetic minor operating hour restrictions and add a regenerative thermal oxidizer control device to K003 and K001.
Permit Type: OAC Chapter 3745-31 Modification
Permit Fee: \$300.00
Issue Date: 11/14/2014
Effective Date: 11/14/2014
Expiration Date: 6/6/2016
Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

CUSTOM POLY BAG COMPANY
9465 EDISON STREET NE
Alliance, OH 44601

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

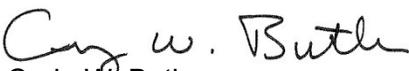
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Canton City Health Department
420 Market Avenue
Canton, OH 44702-1544
(330)489-3385

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


Craig W. Butler
Director



Authorization (continued)

Permit Number: P0117546
Permit Description: Chapter 31 Modification to PTIO P0105587 issued on 08/06/11 to remove the synthetic minor operating hour restrictions and add a regenerative thermal oxidizer control device to K003 and K001.

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

Emissions Unit ID: **K002**
 Company Equipment ID: Flexographic Press Model A-9
 Superseded Permit Number: P0105584
 General Permit Category and Type: Not Applicable

Group Name: Printing Presses > 10 TPY

Emissions Unit ID:	K001
Company Equipment ID:	Flexographic Press Model 586
Superseded Permit Number:	P0105584
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	K003
Company Equipment ID:	10 color Flexographic Press- Infinity
Superseded Permit Number:	P0105584
General Permit Category and Type:	Not Applicable



Final Permit-to-Install and Operate
CUSTOM POLY BAG COMPANY
Permit Number: P0117546
Facility ID: 1576011543
Effective Date: 11/14/2014

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 of this permit 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 [DO/LAA] 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.

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.



Final Permit-to-Install and Operate
CUSTOM POLY BAG COMPANY
Permit Number: P0117546
Facility ID: 1576011543
Effective Date: 11/14/2014

B. Facility-Wide Terms and Conditions



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.



Final Permit-to-Install and Operate
CUSTOM POLY BAG COMPANY
Permit Number: P0117546
Facility ID: 1576011543
Effective Date: 11/14/2014

C. Emissions Unit Terms and Conditions



1. K002, Flexographic Press Model A-9

Operations, Property and/or Equipment Description:

Hudson Sharp Flexographic Printing Press - Model A-9 that has a press speed of 15,000 impressions per hour, 4 natural gas drying ovens (rated at 0.46 mmBtu/hr total combined), and 5 print units

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)(6)

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

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(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 are identified below. 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 3745-31-05(A)(3), as effective 11/30/2001 [Best Available Technology (BAT) for pollutants less than 10 tons per year]	The requirements established pursuant to this rule are equivalent to the requirements of OAC rule 3745-21-09(Y)(1) See b)(2)a – b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective 12/01/2006 [Less than 10 tons per BAT exemption]	See b)(2)c.
c.	OAC rule 3745-21-09(Y)(1)	See b)(2)d. – e.
d.	40 CFR Part 63, Subpart A (40 CFR 63.1-16)	Table 1 to Subpart KK of 40 CFR Part 63 – Applicability of General Provisions
e.	40 CFR Part 63, Subpart KK	See b)(2)f.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	(40 CFR 63.820-839)	

(2) Additional Terms and Conditions

- a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) have been determined to be compliance with the requirements as established pursuant to Ohio Administrative Code (OAC) rule 3745-21-09(Y)(1). See term b)(2)d.
- b. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit identified in b)(1)b. above. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standard (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by the U.S. Environmental Protection Agency (EPA) as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 the emission limitations/control measures in b)(1)b. above no longer apply.
- c. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan (SIP):
 - i. The BAT requirements under OAC rule 3745-31-05(A)(3) do not apply to the Volatile Organic Compound (VOC) emissions from this air contaminant source since the uncontrolled potential to emit for VOC is less than 10 tons/yr taking into account the VOC content requirements pursuant to OAC rule 3745-21-09(Y)(1).
- d. The VOC content of any ink employed in the printing line shall not exceed one of the following limitations:
 - i. 40% VOC by volume of the inks, excluding water and exempt solvents, as determined under paragraph (B) of OAC rule 3745-21-10 of the Administrative Code for $C_{VOC,5}$; or
 - ii. 25% VOC by volume of the volatile matter in the inks, as determined under paragraph (B) of OAC rule 3745-21-10 of the Administrative Code for $C_{VOC,6}$.

[OAC rule 3745-21-09(Y)(1)(a)]



- e. Pursuant to OAC rule 3745-21-09(Y)(3), by complying with the requirements of OAC rule 3745-21-09(Y)(1), emissions unit K002 is not eligible for an exemption under paragraphs (Y)(2)(b) and (Y)(2)(d) of OAC rule 3745-21-09.
 - f. In accordance with 40 CFR 63.820(a)(2)(i) and (ii), the facility-wide uncontrolled potential to emit is less than 10 tons per each rolling 12-month period for each Hazardous Air Pollutant (HAP) at the facility, including materials used for source categories or purposes other than printing or publishing, and less than 25 tons per each rolling 12-month period of any combination of HAPs at the facility including materials used for source categories or purposes other than printing and publishing. Therefore, the facility shall be considered an area source of HAP emissions, and is subject only to the provisions of 40 CFR 63.829(d) and 63.830(b)(1).
- c) Operational Restrictions
- (1) None.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The record of the calculation from OAC rule 3745-21-10(B) shall be maintained for the percent VOC by volume content of each ink or volatile matter in each ink applied in the flexographic printing line, by volume of ink (excluding water and exempt solvents), $C_{VOC,5}$, or by volume of volatile matter in the coatings and inks, $C_{VOC,6}$. The VOC content shall be determined by using U.S. EPA Method 24A for the flexographic printing inks; or the ink formulation data from the manufacturer may be used if based on the same method. The values of V_s , V_{VM} , V_W , and V_{ES} , as applicable, shall be maintained for each ink applied in the flexographic printing line. These records shall be retained for 3 years.

[OAC rules 3745-21-09(Y)(1)(a) and 3745-21-10(B)]
 - (2) When complying with the 40% VOC content by volume limitation in term b)(2)d.i., the permittee shall collect and record the following information each month for the flexographic printing line and shall maintain this information at the facility for a period of 3 years:
 - a. the name and identification number of each ink, as applied;
 - b. the VOC content by volume of each ink, excluding water and exempt solvents, as applied.
[OAC rule 3745-21-09(B)(3)(f)]
 - (3) When complying with the 25% VOC content by volume limitation in term b)(2)d.ii., the permittee shall collect and record the following information each month for the flexographic printing line and shall maintain this information at the facility for a period of 3 years:
 - a. The name and identification number of each ink, as applied;
 - b. The VOC content by volume of the volatile matter in the ink.



[OAC rule 3745-21-09(B)(3)f)]

- (4) The permittee shall collect and record the following information each month and shall maintain the information at the facility for a period of 3 years:
- a. the name and company identification for each ink, thinner, and cleanup material employed in the flexographic printing line;
 - b. the VOC content of each ink, thinner, and cleanup material employed in the flexographic printing line, in pounds per gallon (lbs/gal) or percent by weight;
 - c. the number of gallons (gals) of each ink and thinner employed in the flexographic printing line during the month;
 - d. the number of gallons of each cleanup material employed in the flexographic printing line during the month;
 - e. the total VOC emissions from the inks and thinners employed during the month in the flexographic printing line, i.e., the summation of the products obtained from multiplying the associated VOC content from term d)(4)b. times d)(4)c. above, for all the inks and thinners employed, in pounds per month (lbs/month) for the line;
 - f. the total VOC emissions from cleanup materials employed in the flexographic printing line, i.e., the summation of the products obtained from multiplying the associated VOC content from term d)(4)b. times term d)(1)d. above, for all the cleanup material employed, in pounds per month for the line;
 - g. the total amount, in pounds, of waste ink/solvent (solvent content only, excluding any solids and water) sent off-site each month for recycling and/or disposal; and
 - h. the total monthly VOC emissions, in tons, from the flexographic printing line, i.e., the summation of the monthly emissions from all the inks, thinners, and cleanup materials employed, as recorded in term d)(4)e. and term d)(4)f. above, minus the monthly amount of waste ink/solvent sent off-site each month, as recorded in term d)(4)g., and divided by 2,000 lbs/ton.

[OAC rules 3745-21-09(Y)(1) and 3745-15-03]

- (5) The permittee shall maintain records of all required measurements and calculations needed to demonstrate that the facility is an area source of HAP emissions pursuant to term b)(2)f., including the mass of all HAP containing materials used and the mass fraction of HAP present in each HAP containing material used, on a monthly basis.

[40 CFR 63.829(d)]

- (6) Modeling to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified permit-to-install and operate (PTIO) prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that



changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminants to increase above 1.0 ton per year may require the permittee to apply for and obtain a new PTIO.

[ORC 3704.03(F)(3)(c) and F(4)]

- (7) The permittee may propose to the director an alternative recordkeeping and reporting program. If the alternative recordkeeping and reporting program is approved by the director, it shall supersede the requirements of terms d)(1) – (4), and e)(1) of this permit and shall be specified in the terms and conditions of the permit, variance, or order issued by the director for the printing line. Any alternative recordkeeping and reporting program approved by the director must also be approved by the U.S. EPA as a revision to the state implementation plan.

[OAC rule 3745-21-06(B)(5)]

e) Reporting Requirements

- (1) The permittee shall notify the Canton City Health Department, Air Pollution Control Division of any daily record showing that the daily volume-weighted average VOC content exceeds the applicable limitation in term b)(2)d. The notification shall include a copy of such record and shall be sent to the Canton City Health Department, Air Pollution Control Division within 45 days after the exceedance occurs.

[OAC rule 3745-21-09(B)(3)(i)]

- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Canton City Health Department, Air Pollution Control Division 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 12-months for each air contaminant source identified in this permit. It is recommended that all notifications and reports be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal although notifications and reports can be submitted via U.S. postal service or can be hand delivered. The annual PER shall include the following information:

- a. each day the VOC content of the ink employed in this emissions unit exceeded 40% VOC by volume, excluding water and exempt solvents; or
- b. each day the VOC content of the ink employed in this emissions unit exceeded 25% VOC by volume of the volatile matter in the ink.

- (3) In accordance with 40 CFR 63.9(b), the permittee shall submit an initial notification to the Canton City Health Department, Air Pollution Control Division if an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source that is subject to the emissions standard or other requirements, such source shall be subject to the notification requirements of 40 CFR 63.9.

[40 CFR 63.830(b)(1)]



f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in term b)(2)d. of these terms and conditions shall be determined in accordance with one of the following methods:

a. Emission Limitation:

The VOC content of the inks employed in the flexographic printing line shall not exceed 40% VOC by volume of the ink, excluding water and exempt solvents.

Applicable Compliance Method:

Using U.S. EPA Method 24A for flexographic printing inks or the formulation data from the manufacturer, the VOC content shall be calculated per OAC rule 3745-21-10(B) as follows:

$$C_{VOC,5} = \frac{(100 * V_{VOC})}{(V_S * V_{VOC})}$$

Where:

$C_{VOC,5}$ = VOC content in percentage VOC by volume of the volatile matter

V_{VOC} = volume fraction of VOC in the ink, calculated as:
 $V_{VOC} = V_{VM} - V_W - V_{ES}$

V_S = Volume fraction of solids (nonvolatile matter) in ink, in gallon of solids per gallon of ink

V_{VM} = volume fraction of volatile matter in ink, in gallon of volatile matter per gallon of ink

V_W = volume fraction of water in ink, in gallon of water per gallon of ink

V_{ES} = volume fraction of exempt solvent in ink, in gallon of exempt solvent per gallon of ink

b. Emission Limitation:

The VOC content of the inks employed in the flexographic printing line shall not exceed 25%, by volume of the volatile matter in the ink

Applicable Compliance Method:

Using U.S. EPA Method 24A for flexographic printing inks or the formulation data from the manufacturer, the VOC content shall be calculated per OAC rule 3745-21-10(B) as follows:

$$C_{VOC,6} = \frac{100 * V_{VOC}}{V_{VM}}$$



Where:

$C_{VOC,6}$ = VOC content in percentage VOC by volume of the volatile matter

[OAC rules 3745-21-09(Y)(1)(a)(ii) and 3745-21-10(B)]

g) Miscellaneous Requirements

(1) For informational purposes only:

For informational purposes associated with determining emissions for reports, the VOC emissions were calculated for the purpose of developing this permit by using AP-42, Chapter 4.9.1 Introduction to Graphic Arts: General Graphical Printing [04/81] and the following equations:

The VOC emissions in the ink from the dryers and other printing line components have been determined using the following equation:

$$E_I = I_I V_I * \frac{(100 - P)}{100}$$

Where:

E_I = VOC emissions from ink used in the printing line, lb/hr

I_I = ink usage, gal/hr. Per Application #A0050590, 0.76 gal/hr was used as the ink usage to estimate the emissions unit's potential to emit.

V_I = VOC content of ink, lb/gal. Per Application #A0050590, 1.18 lbs/gal was used to represent the VOC content of the ink to estimate the emissions unit's potential to emit.

P = solvent remaining in product plus that destroyed in dryer, %. A reduction in VOC emission of 2% was used to represent a worst-case scenario to estimate the emissions unit's potential to emit.

Per Application #A0050590, no thinners are intended to be used in this emissions unit because it is designated to employ only water-based inks. However, in the case that thinners are employed, the VOC emissions in the thinner solution from the dryers and other printing line components should be determined using the following equation:

$$E_T = I_T V_T * \frac{(100 - P)}{100}$$

Where:

E_T = VOC emissions from thinner solution used in the printing line, lb/hr

I_T = thinner solution usage, gal/hr.

V_T = VOC content of thinner solution, lb/gal.



P = solvent remaining in product plus that destroyed in dryer, %.

The VOC emissions in the cleanup solution from the dryers and other printing line components have been determined using the following equation:

$$E_C = I_C * V_C$$

Where:

E_C = VOC emissions from cleanup solution used in the printing line, lb/hr

I_C = cleanup solution usage, gal/hr. Per Application #A0050590, 0.15 gal/hr was used as the cleanup solution usage to estimate the emissions unit's potential to emit.

V_C = VOC content of cleanup solution, lb/gal. Per Application #A0050590, 7.41lb/gal was used to represent the VOC content of the cleanup solution to estimate the emissions unit's potential to emit.

The sum of the VOC emissions from the ink, thinner, and cleanup solution was then multiplied by the operating hours and divided by 2,000 pounds per ton (lbs/ton) to calculate the potential to emit.

$$PTE = (E_I + E_T + E_C) * \frac{H \text{ hrs}}{yr} * \frac{1 \text{ ton}}{2,000 \text{ lbs}}$$

Where:

PTE = potential to emit, tons/yr

H = hours of operation per year. Per Application #A0050590, 7,884 hrs/yr was used as a maximum run time for the emissions unit. This value is based on a facility-wide operating schedule of 24hrs/day and 365 days/year and a maximum run time of 90% for the emissions unit

$$\left(\frac{24 \text{ hrs}}{\text{day}} * \frac{365 \text{ days}}{\text{yr}} * 90\% = \frac{7,884 \text{ hrs}}{\text{yr}} \right)$$

The waste ink/solvent sent off-site each month for recycling and/or disposal was then subtracted from this value to calculate the net emissions for this emissions unit.

$$PTE_N = PTE_B - WD$$

Where:

PTE_N = net emissions of VOC, tons/yr

WD = waste ink/solvent, tons/yr. Per Application #A0050590, 6.5 tons/yr of VOC from the ink/solvent waste was sent off-site to be recycled and/or disposed. The waste that was sent off-site had a VOC content of 66.6%



(2) For informational purposes only:

For informational purposes associated with determining emissions for reports, the gas combustion emissions from the ovens and dryers were calculated for the purpose of developing this permit by using AP-42, Chapter 1.4 Natural Gas Combustion [07/98] and the following equations:

The maximum gas usage of the ovens and dryers was determined by multiplying the rating of the ovens and dryers by the hours of operation and converting to million British Thermal units (MMBtu) per year.

$$G = R_D * H * \frac{MMscf}{1,020 MMBtu}$$

Where:

- G = maximum gas usage, million standard cubic feet per year (MMscf/yr). Per Application #A0050590, 29.72 MMscf/yr was calculated to be the maximum gas usage per year.
- R_D = combined rating of the ovens and dryers, MMBtu/hr. Per Application #A0050590 and manufacturer specifications, 0.46 MMBtu/hr was used as the combined maximum burner capacity
- H = maximum hours of operation per year, hrs/yr. During permit development, 7,884hrs/yr was used as the maximum operating hours per year

The maximum gas usage was then multiplied by the appropriate emission factor for each pollutant to find the emissions for each pollutant per year.

$$E_{combustion} = G * EF_p * \frac{1 ton}{2,000 lbs}$$

Where:

- $E_{combustion}$ = emissions per year for each pollutant, tons/yr
- EF_p = emission factors specific to each pollutant, lbs/MMscf. Per Application #A0050590 and AP-42 Chapter 1.4, Tables 1.4-1 and 1.4-2, the emission factor for each pollutant can be found in the following table. The emission factors for each HAP were combined to determine the total emission factor for HAPs.

Pollutant	AP-42 Emission Factor (lbs/MMscf)
Nitrogen Oxides (NOx)	100.00
Carbon Monoxide (CO)	84.00
Particulate Matter (PM)	4.60



Final Permit-to-Install and Operate
CUSTOM POLY BAG COMPANY
Permit Number: P0117546
Facility ID: 1576011543
Effective Date: 11/14/2014

Sulfur Dioxide (SO ₂)	0.60
Organic Compounds (TOC)	11.00
Volatile Compounds (VOC)	5.50



2. Emissions Unit Group -Printing Presses > 10 TPY: K001,K003,

EU ID Operations, Property and/or Equipment Description

- K001 Hudson Sharp Flexographic Printing Press - Model 586 that has a press speed of 15,000 impressions per hour, 4 natural gas drying ovens (rated at 0.46 mmBTU/hr total combined), 6 print units, and is equipped with a common regenerative thermal oxidizer (RTO) that is natural gas fired rated at 3 mmBTU/hr and has a design control efficiency of 98%
- K003 Infinity II Flexographic Printing Press - Model 1004377 that has a press speed of 60,000 impressions per hour, 9 electric drying ovens, 10 enclosed chamber print units, and is equipped with a common RTO that is natural gas fired rated at 3 mmBTU/hr and has a design control efficiency of 98%

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)(6)

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

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(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 are identified below. 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 3704.03(T) OAC rule 3745-31-05(A)(3) [Best Available Technology for sources greater than 10 tons per year]	The requirements established pursuant to this rule are equivalent to the requirements of OAC rule 3745-21-09(Y)(1) See b)(2)a.
b.	OAC rule 3745-21-09(Y)(1)	See b)(2)b. – c., and c)(1) - (2)
c.	40 CFR Part 63, Subpart A (40 CFR 63.1-16)	Table 1 to Subpart KK of 40 CFR Part 63 – Applicability of General Provisions



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	40 CFR Part 63, Subpart KK (40 CFR 63.820-839)	See b)(2)d.

(2) Additional Terms and Conditions

a. The Best Available Technology (BAT) requirements under ORC 3704.03(T) and OAC rule 3745-31-05(A)(3) have been determined to be the use of a Regenerative Thermal Oxidizer (RTO) control device to control emissions of Volatile Organic Compounds (VOC), that complies with the requirements as established pursuant to Ohio Administrative Code (OAC) rule 3745-21-09(Y)(1). See term b)(2)b.

b. The VOC collection and control system (i.e. RTO) for the flexographic printing lines shall have a capture efficiency of at least 65% by weight and a total control efficiency of at least 90% by weight (which equates to 58.5% overall control efficiency), both determined using the methods identified in OAC rule 3745-21-10(C)(2) and under the conditions identified in OAC rule 3745-21-10(C)(3).

[OAC rule 3745-21-09(Y)(1)(b)]

c. Pursuant to OAC rule 3745-21-09(Y)(3), by complying with the requirements of OAC rule 3745-21-09(Y)(1), emissions units K001 and K003 are not eligible for an exemption under paragraphs (Y)(2)(b) and (Y)(2)(d) of OAC rule 3745-21-09.

d. In accordance with 40 CFR 63.820(a)(2)(i) and (ii), the facility-wide uncontrolled potential to emit is less than 10 tons per each rolling 12-month period for each Hazardous Air Pollutant (HAP) at the facility, including materials used for source categories or purposes other than printing and publishing, and less than 25 tons per each rolling 12-month period of any combination of HAPs at the facility including materials used for source categories or purposes other than printing and publishing. Therefore, the facility shall be considered an area source of HAP emissions, and is subject only to the provisions of 40 CFR 63.829(d) and 63.830(b)(1).

c) Operational Restrictions

(1) The permittee shall operate the VOC collection and control system (i.e., RTO) at all times when the printing line is in operation and during cleanup activities.

(2) The permittee shall install and operate continuous monitoring and recording devices for either temperature or VOC concentration. The continuous monitoring and recording devices shall be capable of accurately measuring the desired parameter and shall be operated and maintained in accordance with the manufacturer's recommendations.

[OAC rule 3745-21-09(B)(3)(n)]



d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall collect and record the following information each month and shall maintain the information at the facility for a period of 3 years:
 - a. the name and company identification for each ink, thinner, and cleanup material employed in the flexographic printing line;
 - b. the VOC content of each ink, thinner, and cleanup material employed in the flexographic printing line, in pounds per gallon (lbs/gal) or percent by weight;
 - c. the number of gallons (gals) of each ink and thinner employed in the flexographic printing line during the month;
 - d. the number of gallons of each cleanup material employed in the flexographic printing line during the month;
 - e. the total uncontrolled VOC emissions from the inks and thinners employed during the month in the flexographic printing line, i.e., the summation of the products obtained from multiplying the associated VOC content from term d)(1)b. times term d)(1)c. above, for all the inks and thinners employed, in pounds per month (lbs/month) for the line;
 - f. the total uncontrolled VOC emissions from cleanup materials employed in the flexographic printing line, i.e., the summation of the products obtained from multiplying the associated VOC content from term d)(1)b. times term d)(1)d. above, for all the cleanup material employed, in pounds per month for the line;
 - g. the total amount, in pounds, of waste ink/solvent (solvent content only, excluding any solids and water) sent off-site each month for recycling and/or disposal;
 - h. the total monthly VOC emissions, in tons, from the flexographic printing line, i.e., the summation of the monthly emissions from all inks, thinners, and cleanup materials employed, including fugitive emissions, as recorded in term d)(1)e. and term d)(1)f. above, minus the monthly amount of waste ink/solvent sent off-site each month, as recorded in term d)(1)g. above, and divided by 2,000 lbs/ton; and
 - i. the total controlled VOC emissions from all the inks, thinners, and cleanup materials employed during the month in the flexographic printing line, i.e., term d)(1)h. times (one minus the overall control efficiency of the capture system and control device), as determined during the most recent emission tests that demonstrated the printing line to be in compliance, in tons per month (tons/month) for the line.

[OAC rules 3745-21-09(Y)(1)(b) and 3745-15-03]
- (2) The permittee shall collect and record the following information each day for the control equipment and maintain the information at the facility for a period of 3 years:
 - a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated printing lines.



- b. For a thermal oxidizer, all 3-hour periods of operation during which the average combustion temperature was more than 50 degrees Fahrenheit below the average combustion temperature measured during the most recent performance test that demonstrated the printing line(s) to be in compliance. Until compliance testing has been conducted, the thermal oxidizer shall be operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual.

[OAC rule 3745-21-09(B)(3)(I)]

- (3) Whenever the monitored average combustion temperature within the thermal oxidizer deviates from the range or limit established in accordance with term d)(2)b. in this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;
- c. the date the investigation was conducted;
- d. the name(s) of the personnel who conducted the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the temperature readings immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Canton City Health



Department, Air Pollution Control Division. The permittee may request revisions to the permitted temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the control measure(s) for the controlled pollutant(s). In addition, approved revisions to the temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (4) The permittee shall maintain the records of the results from the stack testing conducted to demonstrate compliance with the capture and control efficiency of the subject flexographic printing line.

[OAC rule 3745-21-09(Y)(1)(b)]

- (5) The permittee shall maintain records of all required measurements and calculations needed to demonstrate that the facility is an area source of HAP emissions pursuant to term b)(2)d., including the mass of all HAP containing materials used and the mass fraction of HAP present in each HAP containing material used, on a monthly basis.

[40 CFR 63.829(d)]

- (6) Modeling to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified permit-to-install and operate (PTIO) prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new PTIO.

[ORC 3704.03(F)(3)(c) and (F)(4)]

- (7) The permittee may propose to the director an alternative recordkeeping and reporting program. If the alternative recordkeeping and reporting program is approved by the director, it shall supersede the requirements of terms d)(1) – (3) and e)(1) of this permit and shall be specified in the terms and conditions of the permit, variance, or order issued by the director for the printing line. Any alternative recordkeeping and reporting program approved by the director also must be approved by the U.S. EPA as a revision to the state implementation plan.

[OAC rule 3745-21-09(B)(5)]

e) Reporting Requirements

- (1) The permittee shall submit quarterly summaries of the records required by OAC 3745-21-09(B)(3)(l), which are listed in term d)(2), for the operating time and 3-hour average temperatures or VOC concentrations monitored during the calendar quarter. These quarterly reports shall be submitted by April 30th, July 31st, October 31st, and January 31st, and shall cover the records for the previous calendar quarter.

[OAC rules 3745-21-09(B)(3)(m) and 3745-21-09(Y)(1)(b)]



- (2) The permittee shall submit an annual Permit Evaluation Report (PER) to the Canton City Health Department, Air Pollution Control Division 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 12-months for each air contaminant source identified in this permit. It is recommended that all notifications and reports be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal although notifications and reports can be submitted via U.S. postal service or can be hand delivered. The annual PER shall include the following information:
- a. each period of time (start time and date, and end time and date) when the average combustion temperature within the thermal oxidizer was outside of the range specified by the manufacturer and/or outside the acceptable range following any required compliance demonstration;
 - b. any period of time (start time and date, and end time and date) when the emissions units were in operation and the process emissions were not vented to the thermal oxidizer;
 - c. each incident of deviation described in term a. or b. above where a prompt investigation was not conducted;
 - d. each incident of deviation described in term a. or b. above where prompt corrective action, that would bring the emissions units into compliance and/or the temperature within the thermal oxidizer into compliance with the acceptable range, was determined to be necessary and was not taken; and
 - e. each incident of deviation described in term a. or b. above where proper records were not maintained for the investigation and/or the corrective action(s).

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

- (3) In accordance with 40 CFR 63.9(b), the permittee shall submit an initial notification to the Canton City Health Department, Air Pollution Control Division if an area source that otherwise would be subject to an emission standard or other requirement established under this part if it were a major source subsequently increases its emissions of hazardous air pollutants (or its potential to emit hazardous air pollutants) such that the source is a major source that is subject to the emissions standard or other requirements, such source shall be subject to the notification requirements of 40 CFR 63.9.

[40 CFR 63.830(b)(1)]

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Control Measure:

Reduce VOC emissions from the flexographic printing line using a VOC collection and control system (i.e., RTO) with a capture efficiency of at least 65%



by weight and a total control efficiency of at least 90% by weight (which equates to 58.5% overall control efficiency)

Applicable Compliance Method:

The permittee shall determine compliance with the control measures above in accordance with the testing requirements in term f)(2), which includes the requirements identified in OAC rule 3745-21-10(C)(2) and OAC rule 3745-21-10(C)(3).

b. Monitoring Requirement:

Collect and record the VOC content of each ink, thinner, and cleanup material employed in the flexographic printing line, in pounds per gallon (lbs/gal) or percent by weight

Applicable Compliance Method:

The VOC content of any inks employed shall be sampled and analyzed in accordance with OAC rule 3745-21-10(B). OAC rule 3745-21-10(B)(4) requires using either the procedures set forth in U.S. EPA Method 21 or 24A, or the ink formulation data from the ink manufacturer and ink user.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted per the schedule established for emissions unit K004 in PTIO P0117189 and as required by the Canton City Health Department, Air Pollution Control Division.

b. The emission testing shall be conducted to demonstrate compliance with the capture efficiency and the control efficiency of the vapor collection and control system (i.e. RTO). The same RTO is used to control emissions from flexographic printing lines, emissions units K001, K003, and K004.

c. The following test method(s) shall be employed to demonstrate compliance with the capture and control efficiencies:

i. For capture efficiency, unless determined otherwise by the Canton City Health Department, Air Pollution Control Division:

Methods 204 A through F, as appropriate, from 40 CFR Part 51, Appendix M

ii. The mass emissions of VOC as carbon shall be employed in the control efficiency determination; for VOC concentration in the gas stream and exhaust vent:

Method 25 or 25A, from 40 CFR Part 60, Appendix A



- iii. For sampling and velocity traverses:
Method 1, from 40 CFR Part 60, Appendix A
 - iv. For stack gas velocity and volumetric flow rate:
Method 2, from 40 CFR Part 60, Appendix A
 - v. For gas analysis for carbon dioxide, oxygen, excess air, and dry molecular weight:
Method 3, from 40 CFR Part 60, Appendix A
 - vi. For moisture content in the stack gases:
Method 4, from 40 CFR Part 60, Appendix A
 - vii. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- d. The test(s) shall be conducted while all the emissions units controlled by the common RTO (K001, K003, and K004) are operating at or near their maximum capacities, and the measurement of the operating rates shall be made in a manner acceptable to the Canton City Health Department, Air Pollution Control Division.
 - e. The VOC emissions rate, used for control efficiency measurement, shall be based upon the average of three test runs. Each run shall have a minimum duration of one hour and minimum sample volume of 0.003 dry standard cubic meter. Gas stream samples shall be taken simultaneously at the inlet and the outlet of the vapor control system.
 - f. The capture efficiency of the vapor collection system shall be the percent of total mass emission of VOC emitted from the printing line(s) that are captured and vented to the vapor control system, as determined at the inlet to the control device. The total mass emission of VOC shall be determined per the procedures set forth in terms d)(1)a. – h., which should be completed for the time period of each test run.
 - g. The control efficiency of the control device (vapor control system) shall be the percent reduction in mass emissions of VOC between the inlet and the outlet of the control device.
 - h. The overall control efficiency (in percent) for VOC shall be the vapor capture efficiency multiplied by the vapor control efficiency, divided by one hundred.
 - i. The permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guidelines for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the



alternative if such approval does not contravene any other applicable requirement.)

- j. The operating temperature of the RTO shall be continuously measured and recorded per term c)(2). The operating temperature measurements should be averaged every 15 minutes (15-minute blocks of time) during emission testing. A copy of the complete temperature monitoring data, and the 15-minute averages for the day that the emission test was conducted, shall be included with the test report required in term f)(2)m. below. The 15-minute average data will be used to establish the minimum operating temperature of the RTO referenced in term d)(2)b.
- k. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Canton City Health Department, Air Pollution Control Division. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions units operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Canton City Health Department, Air Pollution Control Division's refusal to accept the results of the emission test(s).
- l. Personnel from the Canton City Health Department, Air Pollution Control Division shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- m. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the test(s) and submitted to the Canton City Health Department, Air Pollution Control Division within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Canton City Health Department, Air Pollution Control Division.

[OAC rules 3745-21-10(C)(2) and (3) and 3745-21-09(Y)(1)(b)]

g) **Miscellaneous Requirements**

(1) For informational purposes only:

For informational purposes associated with determining emissions for reports, the VOC emissions were calculated for the purpose of developing this permit by using AP-42, Chapter 4.9.1 Introduction to Graphic Arts: General Graphical Printing [04/81] and the following equations:

The VOC emissions in the ink from the dryers and other printing line components have been determined using the following equation:



$$E_I = I_I V_I * \frac{(100 - P)}{100}$$

Where:

E_I = VOC emissions from ink used in the printing line, lb/hr

I_I = ink usage, gal/hr. Per Application #A0050590, 0.88 gal/hr was used as the ink usage in K001 to estimate the emissions unit's potential to emit, and 2.96 gal/hr was used as the ink usage in K003 to estimate the emissions unit's potential to emit.

V_I = VOC content of ink, lb/gal. Per Application #A0050590, 5.72 lbs/gal was used to represent the VOC content of the ink to estimate each emissions unit's potential to emit.

P = solvent remaining in product plus that destroyed in dryer, %. A reduction in VOC emission of 2% was used to represent a worst-case scenario to estimate each emissions unit's potential to emit.

The VOC emissions in the thinner solution from the dryers and other printing line components have been determined using the following equation:

$$E_T = I_T V_T * \frac{(100 - P)}{100}$$

Where:

E_T = VOC emissions from thinner solution used in the printing line, lb/hr

I_T = thinner solution usage, gal/hr. Per Application #A0050590, 1.47 gals/hr was used as the thinner solution usage in K001 to estimate the emissions unit's potential to emit, and 4.5 gals/hr was used as the thinner solution usage in K003 to estimate the emissions unit's potential to emit.

V_T = VOC content of thinner solution, lb/gal. Per Application #A0050590, 6.58 lbs/gal was used to represent the VOC content of the thinner solution to estimate each emissions unit's potential to emit.

P = solvent remaining in product plus that destroyed in dryer, %. A reduction in VOC emission of 2% was used to represent a worst-case scenario to estimate each emissions unit's potential to emit.

The VOC emissions in the cleanup solution from the dryers and other printing line components have been determined using the following equation:

$$E_C = I_C * V_C$$

Where:

E_C = VOC emissions from cleanup solution used in the printing line, lb/hr



- I_C = cleanup solution usage, gal/hr. Per Application #A0050590, 0.29 gal/hr was used as the cleanup solution usage in K001 to estimate the emissions unit's potential to emit, and 0.75 gal/hr was used as the cleanup solution usage in K003 to estimate the emissions unit's potential to emit.
- V_C = VOC content of cleanup solution, lb/gal. Per Application #A0050590, 6.58 lb/gal was used to represent the VOC content of the cleanup solution to estimate each emissions unit's potential to emit.

The sum of the VOC emissions from the ink, thinner solution and cleanup solution was then multiplied by the operating hours and divided by 2,000 pounds per ton (lbs/ton) to calculate the potential to emit before use of the RTO.

$$PTE_B = (E_I + E_T + E_C) * \frac{H \text{ hrs}}{yr} * \frac{1 \text{ ton}}{2,000 \text{ lbs}}$$

Where:

PTE_B = potential to emit before controls, tons/yr

H = hours of operation per year. Per Application #A0050590, 7,884 hrs/yr was used as a maximum run time for each emissions unit. This value is based on a facility-wide operating schedule of 24hrs/day and 365 days/year and a maximum run time of 90% for the emissions units

$$\left(\frac{24 \text{ hrs}}{\text{day}} * \frac{365 \text{ days}}{\text{yr}} * 90\% = \frac{7,884 \text{ hrs}}{\text{yr}} \right)$$

The waste ink/solvent sent off-site each month for recycling and/or disposal was then subtracted from this value to calculate the net emissions for each emissions unit.

$$PTE_N = PTE_B - WD$$

Where:

PTE_N = net emissions of VOC, tons/yr

WD = VOCs in waste ink/solvent, tons/yr. Per Application #A0050590, 2 tons/yr of VOC from the ink/solvent waste from K001 was sent off-site to be recycled and/or disposed, and 6.5 tons/yr of VOC from the ink/solvent waste from K003 was sent off-site to be recycled and/or disposed. The waste that was sent off-site had a VOC content of 66.6% by volume for K003 and 11.4% by volume for K001.

The net VOC emissions were then multiplied by the capture and control efficiency of the RTO to find the controlled emissions of VOC (stack and fugitive) from each emissions unit.

$$PTE = PTE_N * (1 - EF_{CC})$$



Where:

PTE = annual VOC emissions, tons/yr

EF_{CC} = 58.5%, design efficiency of the RTO. Per Application #A0050590, a capture efficiency of 65% was multiplied by the control efficiency of 90% to find the design efficiency (65% * 90% = 58.5%)

Alternatively, the stack and fugitive VOC emissions can be calculated separately using the following equations:

- a. The stack VOC emissions were calculated by multiplying the net VOC emissions by the percentage of emissions that are captured by the RTO times one minus the control efficiency of the RTO.

$$Stk = PTE_N * EF_{cap} * (1 - EF_{con})$$

Where:

Stk = stack VOC emissions, tons/yr

EF_{cap} = capture efficiency of the RTO, %. Per Application #A0050590 and OAC rule 3745-21-09(Y)(1)(b), 65% was used as a minimum capture efficiency

EF_{con} = control efficiency of the RTO, %. Per Application #A0050590, 90% was used as the control efficiency of the RTO

- b. The fugitive VOC emissions were calculated by multiplying the net VOC emissions by the percentage of emissions that are not captured by the RTO.

$$Fug = PTE_N * (1 - EF_{cap})$$

Where:

Fug = fugitive VOC emissions, tons/yr

(2) For informational purposes only:

For informational purposes associated with determining emissions for reports, the gas combustion emissions from the ovens, dryers and RTO were calculated for the purpose of developing this permit by using AP-42, Chapter 1.4 Natural Gas Combustion [07/98] and the following equations:

The maximum gas usage of the ovens, dryers and RTO was determined by multiplying the rating of ovens and dryers by the hours of operation and converting to million British Thermal Units (MMBtu) per year.



$$G = (R_D + R_{RTO}) * H * \frac{MMscf}{1,020 MMBtu}$$

Where:

- G = maximum gas usage, million standard cubic feet per year (MMscf/yr). Per Application #A0050590, 29.72 MMscf/yr was calculated to be the maximum gas usage per year
- R_D = total combined rating of the ovens and dryers, MMBtu/hr. Per Application #A0050590 and manufacturer specifications, 0.46 MMBtu/hr was used as the maximum burner capacity combined for all ovens and dryers per emissions unit
- R_{RTO} = rating of the RTO, MMBtu/hr. Per Application #A0050590 and manufacturer specifications, 3 MMBtu/hr was used as the maximum burner capacity of the RTO
- H = maximum hours of operation per year, hrs/yr. During permit development, 8,760 hrs/yr was used as the maximum operating hours per year

The maximum gas usage was then multiplied by the appropriate emission factor for each pollutant to find the emissions for each pollutant per year.

$$E_{combustion} = G * EF_P * \frac{1 \text{ ton}}{2,000 \text{ lbs}}$$

Where:

- $E_{combustion}$ = emissions per year for each pollutant, tons/yr
- EF_P = emission factors specific to each pollutant, lbs/MMscf. Per Application #A0050590 and AP-42 Chapter 1.4, Tables 1.4-1 and 1.4-2, the emission factor for each pollutant can be found in the following table. The emission factors for each HAP were combined to determine the total emission factor for HAPs.

Pollutant	AP-42 Emission Factor (lbs/MMscf)
Nitrogen Oxides (NOx)	100.00
Carbon Monoxide (CO)	84.00
Particulate Matter (PM)	4.60
Sulfur Dioxide (SO2)	0.60
Organic Compounds (TOC)	11.00
Volatile Compounds (VOC)	5.50