

AIR EMISSION PERMIT NO. 16100013 - 002

IS ISSUED TO

Brown Printing Company- Division of Gruner & Jahr

Brown Printing Company - Waseca Division
2300 Brown Avenue
Waseca, Waseca County, MN 56093

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Action #	Application Date	Permit Issuance Date
Total Facility Operating Permit	001	04/14/1995	1/13/03
Major Amendment	002	02/02/2005	See below

This permit authorizes the Permittee to operate and modify the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal; Pt 70/Limits to Avoid NSR

Final Permit Issuance Date: 6/24/2005

Expiration: 01/13/2008

All Title I Conditions do not expire.

Richard J. Sandberg, Manager
Air Quality Permits Section
Industrial Division

for Sheryl A. Corrigan
Commissioner
Minnesota Pollution Control Agency

TABLE OF CONTENTS

Notice to the Permittee

Permit Shield

Facility Description

Table A: Limits and Other Requirements

Table B: Submittals

Appendix I: VOC and HAP Calculation Methods

Appendix II: Listed Insignificant Activities

Appendix III: Emission Units' Numbering

Appendix IV: Summary of the Maximum Impressions and Design Air Flow Rates

Appendix V: Regenerative Thermal Oxidizer's Flow Rate versus Residence Time

NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	(651) 296-6300
Outside Metro Area	1-800-657-3864
TTY	(651) 282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

Total Facility

Brown Printing (Facility) is a commercial printing facility. The Facility consists of heatset web offset printing presses, dryers, and pollution control equipment. The Facility also has several activities that qualify as insignificant activities under Minn. R. 7007.1300, subp. 3 (see Appendix II of the permit for a list).

In 1999, the Facility took permit limits to avoid major source classification for New Source Review (40 CFR § 52.21) and the National Emissions Standards for Hazardous Air Pollutants program (40 CFR pt. 63). These limits are carried forward into this permit. The Facility is a major source under the federal operating permits program (40 CFR pt. 70).

The permit contains requirements that limit emissions of volatile organic compounds, hazardous air pollutants, and combustion pollutants.

Major Amendment -002

This permit action authorizes the following changes to the current Title V permit:

- 1) Increases the overall facility's impressions cap from 1,300,391.7 to 1,900,000 impressions per hour.
- 2) Authorizes the usage of CE 008 to production status, as opposed to only backup status. In addition, GP 003 is eliminated and the requirements are transferred to CE 008.
- 3) Changes the requirement of establishing the maximum number of presses allowed to feed into one oxidizer from a number of presses to oxidizer number to the design intake flow of the oxidizers.
- 4) Assigns a combustion chamber temperature and residence time curve for CE 009 and CE 010.
- 5) GP 007 is eliminated and the emission units are transferred to GP 006.

The overall VOC and HAP emission limits and compliance demonstration requirements remain.

The permit also continues to authorize the following changes at the Facility:

- 1) addition of new boilers (EU 030, EU 033);
- 2) modification and replacement of existing printing press emissions units;
- 3) addition of one new press (EU 029); and,
- 4) emission units that:
 - i) qualify as an insignificant activity listed under Minn. R. 7007.1300, subp. 2;
 - ii) qualify as an insignificant modification under Minn. R. 7007.1250, subps. 1 and 2; and
 - iii) do not violate any other requirements found in this permit.

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division
 Permit Number: 16100013 - 002

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: Total Facility

What to do	Why to do it
This permit establishes limits on the facility to keep it a minor source under the New Source Review and the NESHAP program. The Permittee cannot make any change at the source that would make the source a major source under New Source Review or the NESHAP program until a permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 63.2
The Permittee shall not begin construction of any single project or projects that are connected or phased which will cause a total increase in actual emissions of greater than 99 tons per year for any criteria pollutant without first getting a permit amendment to authorize the project. Connected and phased have meanings as defined in Minn. R. 4410.022, subps. 9b and 60. The Permittee shall not begin construction of any other project which is listed in Minn. R. 4410.4300 or Minn. R. 4410.4400 without first getting a permit amendment to authorize the project. Such projects may require the completion of an Environmental Assessment Worksheet or an Environmental Impact Statement prior to the amendment being issued. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 4410.4300 and Minn. R. 4410.4400
Annual Report: due 30 days after the end of each calendar year following the Permit issuance. The Permittee shall submit an annual report by January 31 that describes the changes made at the facility during the previous calendar year using the latest MPCA application forms. The report shall document: 1) the VOC and HAP 12-month rolling sum calculations for the previous calendar year, 2) the total facility fuel consumption capacity, and 3) the total facility impressions capacity. The report shall be submitted with the annual Compliance Certification listed in Table B. As part of the Annual Report, the Permittee shall verify and certify that the facility has maintained minor source status for New Source Review and Part 63.	Minn. R. 7007.0800, subp. 2
Equipment Labeling and Inventory: The Permittee shall permanently affix a unique number to each emissions unit for tracking purposes. The numbers shall correlate the unit to the appropriate EU and GP numbers used in this permit. The number can be affixed by placard, stencil, or other means. The number shall be maintained so that it is readable and visible at all times from a safe distance. The Permittee shall maintain a written list of all emission units on-site. The list shall correlate the units to the numbers used in this permit (EU, GP, and CE). The Permittee shall update the list to include any new, replaced, or modified equipment prior to making the pre-authorized change.	Minn. R. 7007.0800, subp. 2
STANDARD REQUIREMENTS	hdr
Fuel Type: Natural gas or liquified propane gas (LPG) only. This total facility limit applies to, but is not limited to, all press dryers, thermal oxidizers, the chiller, space heaters, air make-up units, boilers, and gas-fired insignificant activities.	Title I Condition: To avoid classification as a major source or modification under 40 CFR 52.21
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and shall include a preventative maintenance program for that equipment, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment, and the records kept to demonstrate plan implementation. For the regenerative thermal oxidizers, the O & M plan shall include the manufacturer's maintenance manual.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.</p> <p>Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test</p>	<p>Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2</p>
<p>Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.</p>	<p>Minn. R. 7011.0020</p>
<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	<p>Minn. R. 7019.1000, subp. 3</p>
<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	<p>Minn. R. 7019.1000, subp. 2</p>
<p>Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.</p>	<p>Minn. R. 7019.1000, subp. 1</p>
<p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. 	<p>Minn. R. 7019.1000, subp. 1</p>
<p>Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.</p>	<p>Minn. R. 7019.1000, subp. 4</p>
<p>Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.</p>	<p>Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
Emission Inventory Report: due 91 days after end of each calendar year following permit issuance (April 1). To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

Subject Item: GP 001 Press Limits

- Associated Items:**
- EU 001 Web Offset Press 1221
 - EU 002 Web Offset Press 1219
 - EU 003 Web Offset Press 1211
 - EU 004 Web Offset Press 1212
 - EU 005 Web Offset Press 1213
 - EU 006 Web Offset Press 1214
 - EU 007 Web Offset Press 1222
 - EU 008 Web Offset Press 1216
 - EU 009 Web Offset Press 1217
 - EU 010 Web Offset Press 1218
 - EU 024 Web Offset Press 1220
 - EU 027 Web Offset Press 1223
 - EU 028 Web Offset Press 1224
 - EU 029 Web Offset Press 1225 (future)

What to do	Why to do it
A. LIMITS	hdr
<p>Volatile Organic Compounds: less than or equal to 232.5 tons/year using 12-month Rolling Sum to be calculated, by the last day of each month, for the previous 12-month period as described in Appendix I. This includes all non-combustion VOC emissions including from all inks, pressrooms, prep areas, and bindery chemicals.</p> <p>All emission units included in GP 001 as allowed in this permit shall be included in this calculation. VOC contents for each VOC-containing material shall be determined as described under the Material Content requirement in GP 001. The calculation of VOCs used may be taken into account recovered/recycled VOCs as described under the Waste Credit requirement in GP 001.</p>	<p>Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and Minn. R. 7007.3000</p>
<p>HAPs - Total: less than or equal to 22.1 tons/year using 12-month Rolling Sum to be calculated, by the last day of each month, for the previous 12-month period as described in Appendix I. This includes all non-combustion HAP emissions including from all inks, pressrooms, prep areas, and bindery chemicals.</p> <p>All emission units included in GP 001 as allowed in this permit shall be included in this calculation. HAP contents for each HAP-containing material shall be determined as described under the Material Content requirement in GP 001. The calculation of HAPs used may take into account recovered/recycled HAPs as described under the Waste Credit requirement in GP 001.</p>	<p>Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 63.2</p>
<p>HAP-Single: less than or equal to 9.0 tons/year using 12-month Rolling Sum to be calculated, by the last day of each month, for the previous 12-month period. This includes all non-combustion HAP emissions including from all inks, pressrooms, prep areas, and bindery chemicals.</p> <p>All emission units included in GP 001 as allowed in this permit shall be included in this calculation. HAP contents for each HAP-containing material shall be determined as described under the Material Content requirement in GP 001. The calculation of HAP usage may take into account recovered/recycled HAPs as described under the Waste Credit requirement in GP 001.</p>	<p>Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 63.2</p>
<p>The total facility's web offset press capacity shall not exceed 1,900,000 impressions per hour. One impression is defined to cover a maximum area of 22 3/4 inches by 38 inches (6.0 sq. ft.).</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>Pre-Authorized Changes: The Permittee may 1) modify the listed emission units, 2) replace the listed emission units with emission units similar to those listed in GP 001, or 3) add a Web Offset Press #1225, provided VOC and HAP emissions are tracked and calculated as specified in this permit, and all other permit conditions are met. Emissions from all presses and dryers must be controlled with control equipment meeting the requirements of either CE 008 or GP 004. See GP 002 for further pre-authorized changes for press operations.</p> <p>If a proposed change triggers an applicable requirement that is not contained in this permit, the change must go through the appropriate procedures in Minn. R. ch. 7007.</p>	<p>Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid major source classification under 40 CFR Section 63.2</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

<p>B. MONITORING</p>	<p>hdr</p>
<p>Monthly Recordkeeping -- VOC Emissions</p> <p>By the last day of each month, the Permittee shall calculate and record the following:</p> <ol style="list-style-type: none"> 1) The total purchase of each VOC-containing material for the previous calendar month using the material record of purchases. The record of purchases is to be compiled, during the course of the month, as the material shipments are delivered to the Permittee. This record shall also include the VOC contents of each material as determined by the Material Content requirement of this permit. 2) The VOC emissions for the previous month using the formulas specified in Appendix I of this permit. 3) The 12-month rolling sum VOC emissions for the previous 12-month period by summing the monthly VOC emissions data for the previous 12 months. 	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Monthly Recordkeeping -- HAP Emissions. By the last day of the month, the Permittee shall calculate and record the following:</p> <ol style="list-style-type: none"> 1) The total purchase of each HAP-containing material used in the previous calendar month using the material record of purchases. The record of purchases is to be compiled, during the course of the month, as the material shipments are delivered to the Permittee. This record shall also include the individual and total HAP contents of each HAP-containing material used in the previous month, as determined by the Material Content requirement of this permit. 2) The total and individual HAP emissions for the previous month using formulas specified in Appendix I of this permit. 3) The 12-month rolling sum total and individual HAP emissions for the previous 12-month period by summing the monthly emissions data for the previous 12 months. 	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Material Content: VOC and HAPs contents in materials shall be determined by the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. If a material content range is given on the MSDS, the highest number in the range shall be used in all compliance calculations. Other alternative methods approved by the MPCA may be used to determine the VOC and HAPs contents. The Commissioner reserves the right to require the Permittee to determine the VOC and/or HAP contents of any material, according to EPA or ASTM reference methods. If an EPA or ASTM reference method is used for material content determination, the data obtained shall supercede the MSDS.</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Waste Credit: If the Permittee elects to obtain credit for HAPs and/or VOC shipped in waste materials, the Permittee shall either use item 1 or 2 to determine the VOC and/or total and individual HAP content for each credited shipment.</p> <ol style="list-style-type: none"> 1) The Permittee shall analyze a composite sample of each waste shipment to determine the weight content of VOC, total HAP, and each individual HAP, excluding water. 2) The Permittee may use supplier data for raw materials to determine the VOC and total and individual HAP contents of each waste shipment, using the same content data used to determine the content of raw materials. If the waste contains several materials, the content of mixed waste shall be assumed to be the lowest VOC and total and individual HAP content of any of the materials. 	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>The Permittee shall record and maintain the capacity of the maximum number of impressions per hour for the total facility. Whenever a change is made to a press capacity, the maximum number of impressions per hour in the total facility shall be updated. This record shall be kept on-site.</p> <p>If the total facility actual VOC usage exceeds 95% of the 232.5 (220.8) ton per 12-month rolling sum, then the Permittee shall record the actual number of impressions used facility-wide each day.</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>Recordkeeping of Changes: Prior to making any pre-authorized change pertaining to the web offset presses, the Permittee shall document that the proposed change meets the criteria listed in this permit and is, therefore, pre-authorized. This document shall include, at a minimum, 1) the new press is a web offset heat press; 2) the VOC and HAP emissions can be calculated in Appendix I; 3) the total facility impression and fuel consumption limits will not be exceeded; and 4) the unit will be controlled as specified in GP 002. The Permittee shall maintain this documentation on-site. This requirement does not apply to the addition of EU 027, EU 028, and EU 029.</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

Subject Item: GP 002 Press Operations**Associated Items:** CE 008 Thermal Oxidizer
CE 009 Regenerative Thermal Oxidizer
CE 010 Regenerative Thermal Oxidizer
SV 014 Thermal Oxidizer
SV 017 Regenerative Thermal Oxidizer
SV 018 Regenerative Thermal Oxidizer

What to do	Why to do it
The Permittee shall control the emissions from the Press operations (presses and dryers) with control devices described by either 1) CE 008 or 2) GP 004, at all times that the given press is operating.	Title I Condition: Limit to avoid major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

Subject Item: GP 004 Regenerative Thermal Oxidizers

Associated Items: CE 009 Regenerative Thermal Oxidizer

CE 010 Regenerative Thermal Oxidizer

SV 017 Regenerative Thermal Oxidizer

SV 018 Regenerative Thermal Oxidizer

What to do	Why to do it
These requirements apply to each individual control device listed in GP 004 (i.e., CE 009 and CE 010).	hdr
LIMITS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves a destruction efficiency for Volatile Organic Compounds: greater than or equal to 98 percent control efficiency. This requirement also applies to the HAPs.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2
The Permittee shall operate and maintain the appropriate number of regenerative thermal oxidizer(s), any time, that any process equipment controlled by the regenerative thermal oxidizer(s) is in operation.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2
Each regenerative thermal oxidizer (CE 009 and CE 010) shall be in operation for Web Offset Presses with an adjustable intake flow rate. During normal production or backup mode operations, either the CE 009 or CE 010 maximum intake flow rate shall not exceed 25,000 SCFM. In other words, the sum of the individual press exhaust flow rates into CE 009 cannot exceed the CE 009 design intake flow of 25,000 SCFM. The individual press design flow rates are found in Appendix IV of the additional Appendix material.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2
Temperature: greater than or equal to 1600 degrees F using 3-hour Rolling Average in the Combustion Chamber unless a new minimum must be set pursuant to Minn. R. 7017.2025, subp. 3, based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC emissions was demonstrated. If the three-hour rolling average temperature drops below the minimum temperature limit, the VOC used during that time shall be considered uncontrolled until the minimum temperature limit is once again achieved. This shall be reported as a deviation.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2
The Permittee shall retain a minimum retention time, as provided by the manufacturer's warranty, in each regenerative thermal that is controlling press operations. The manufacturer's warranty parameters are found in Appendix V of the additional Appendix material.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2
MONITORING	hdr
Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required.	Minn. R. 7007.0800, subp. 4
The Permittee shall maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 2.5 degrees Celsius. The recording device shall also calculate the three-hour rolling average combustion chamber temperature.	Minn. R. 7007.0800, subps. 4 and 5
The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings of each thermal oxidizer during oxidizer operation for the combustion chamber. Measurements shall be taken no less frequently than once every fifteen minutes. Measurements taken during each hour shall be averaged to determine the 1-hour average temperature. Once each hour, the Permittee shall take the average of the previous three 1-hour temperature averages to determine the 3-hour rolling average temperature.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 and 5
Daily Monitoring: The Permittee shall physically check the temperature recording device at least once each operating day to verify that it is working and recording properly.	Minn. R. 7007.0800, subps. 4 and 5
Inspections: The Permittee shall conduct inspections in accordance to the manufacturer's maintenance manual maintenance checklist. The Permittee shall maintain a written record of the quarterly, semi-annual, and annual inspections and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subps. 4, 5, and 14
Annual Calibration: The Permittee shall calibrate the temperature monitor at least annually and shall maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subps. 4, 5, and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

<p>For periods when the regenerative thermal oxidizer is operated above the minimum combustion chamber temperature, the Permittee shall use either one of the following when completing calculations as required elsewhere in this permit:</p> <p>a. The overall control efficiency limit specified in this permit for this equipment (98%); or</p> <p>b. The overall control efficiency determined during the most recent MPCA approved performance test. If the tested efficiency is less than the efficiency limit in this permit, the Permittee must use the tested value in all calculations until the efficiency is demonstrated to be above the permit limit through a new test.</p>	<p>Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Corrective Actions: If the temperature is below the minimum specified by this permit or if the regenerative thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible.</p> <p>Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the regenerative thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken.</p>	<p>Minn. R. 7007.0800, subps. 4, 5, and 14</p>
<p>The Permittee shall operate and maintain the regenerative thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.</p>	<p>Minn. R. 7007.0800, subp. 14</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division
 Permit Number: 16100013 - 002

Subject Item: GP 005 Direct Heating Equipment

Associated Items: CE 008 Thermal Oxidizer
 CE 009 Regenerative Thermal Oxidizer
 CE 010 Regenerative Thermal Oxidizer
 SV 014 Thermal Oxidizer
 SV 017 Regenerative Thermal Oxidizer
 SV 018 Regenerative Thermal Oxidizer

What to do	Why to do it
These requirements apply to each individual control device listed in GP 005 (i.e., CE 008, CE 009 and CE 010).	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This applies separately to each piece of direct heating equipment.	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This applies separately to each piece of direct heating equipment.	Minn. R. 7011.0610, subp. 1(A)(2)

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

Subject Item: GP 006 Indirect Heating Equipment

Associated Items: EU 019 Boiler A
 EU 020 Boiler B
 EU 030 Boiler C
 EU 033 Boiler D
 SV 009 Boiler A
 SV 010 Boiler B
 SV 016 Boiler D
 SV 019 Boiler C

What to do	Why to do it
These requirements apply to each individual boiler listed in GP 006 (i.e., EU 019, EU 020, EU 030, and EU 033).	hdr
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input	Minn. R. 7011.0515, subp. 1
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0515, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

Subject Item: GP 008 Paper Waste Recycling Fabric Filters

- Associated Items:** CE 004 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 005 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 006 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 007 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 EU 015 Paper Waste Recycling System
 EU 016 Paper Waste Recycling System
 EU 017 Paper Waste Recycling System
 EU 018 Paper Waste Recycling System
 SV 005 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 SV 006 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 SV 007 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 SV 008 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
These requirements apply to each individual control equipment.	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation.	Minn. R. 7007.0800, subp. 2
The Permittee shall follow the manufacturer's specifications for the operation and maintenance of the fabric filters.	Minn. R. 7007.0800, subp. 2
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

Subject Item: GP 009 Total Facility Fuel Consumption Capacity

What to do	Why to do it
Total Facility Fuel Consumption Capacity: less than or equal to 210.0 million Btu's/hour. This applies to, but is not limited to, all press dryers, thermal oxidizers, the chiller, space heaters, air make-up units, boilers, and gas-fired insignificant activities.	Minn. R. 7007.0800, subp. 2
The Permittee shall record and maintain the total facility capacity of the gas-fired units in millions of Btu's per hour. Whenever a change is made to a gas-fired unit, this capacity value shall be updated. This record shall be kept on-site.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

Subject Item: EU 026 Chiller Unit**Associated Items:** SV 015 Chiller Unit

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent	Minn. R. 7011.0715, subp. 1(B)
Fuel Usage: Natural gas only, by design.	Minn. R. 7005.0100, subp. 35a

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

Subject Item: CE 008 Thermal Oxidizer

- Associated Items:**
- EU 001 Web Offset Press 1221
 - EU 002 Web Offset Press 1219
 - EU 003 Web Offset Press 1211
 - EU 004 Web Offset Press 1212
 - EU 005 Web Offset Press 1213
 - EU 006 Web Offset Press 1214
 - EU 007 Web Offset Press 1222
 - EU 008 Web Offset Press 1216
 - EU 009 Web Offset Press 1217
 - EU 010 Web Offset Press 1218
 - EU 024 Web Offset Press 1220
 - EU 027 Web Offset Press 1223
 - EU 028 Web Offset Press 1224
 - EU 029 Web Offset Press 1225 (future)
 - GP 002 Press Operations
 - GP 005 Direct Heating Equipment

What to do	Why to do it
LIMITS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves a destruction efficiency of Volatile Organic Compounds: greater than or equal to 98 percent control efficiency for CE 008. This requirement also applies to the HAPs.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2
The Permittee shall operate and maintain the appropriate number of thermal oxidizer(s), any time, that any process equipment controlled by the thermal oxidizer(s) is in operation.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2
CE 008 shall be in operation for Web Offset Presses with an adjustable intake flow rate controlled by other oxidizers (e.g. CE 009 and CE 010). During normal production or backup mode operations, the CE 008 maximum intake flow rate shall not exceed 21,000 SCFM. In other words, the sum of the individual press exhaust flow rates into CE 008 cannot exceed the CE 008 design intake flow of 21,000 SCFM. The individual press design flow rates are found in Appendix IV of the additional Appendix material.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2
A. MONITORING SCENARIOS	hdr
Temperature: greater than or equal to 1300 degrees F using 3-hour Rolling Average in the Combustion Chamber unless a new minimum must be set pursuant to Minn. R. 7017.2025, subp. 3, based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC emissions was demonstrated. If the three-hour rolling average temperature drops below the minimum temperature limit, the VOC used during that time shall be considered uncontrolled until the minimum temperature limit is once again achieved. This shall be reported as a deviation.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2
The Permittee shall retain a minimum retention time of 0.7 seconds when controlling press emissions.	Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2
MONITORING	hdr
Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required.	Minn. R. 7007.0800, subp. 4
The Permittee shall maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 2.5 degrees Celsius. The recording device shall also calculate the three-hour rolling average combustion chamber temperature.	Minn. R. 7007.0800, subps. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

<p>The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings of each thermal oxidizer during oxidizer operation for the combustion chamber. Measurements shall be taken no less frequently than once every fifteen minutes. Measurements taken during each hour shall be averaged to determine the 1-hour average temperature. Once each hour, the Permittee shall take the average of the previous three 1-hour temperature averages to determine the 3-hour rolling average temperature.</p>	<p>Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Daily Monitoring: The Permittee shall physically check the temperature recording device at least once each operating day to verify that it is working and recording properly.</p>	<p>Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment internal and external system components, including but not limited to the refractory, heat exchanger, and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.</p>	<p>Minn. R. 7007.0800, subps. 4, 5, and 14</p>
<p>Annual Calibration: The Permittee shall calibrate the temperature monitor at least annually and shall maintain a written record of the calibration and any action resulting from the calibration.</p>	<p>Minn. R. 7007.0800, subps. 4, 5, and 14</p>
<p>For periods when the thermal oxidizer is operated above the minimum combustion chamber temperature, the Permittee shall use either one of the following when completing calculations as required elsewhere in this permit: a. The overall control efficiency limit specified in this permit for this equipment (98% for CE 008); or b. The overall control efficiency determined during the most recent MPCA approved performance test. If the tested efficiency is less than the efficiency limit in this permit, the Permittee must use the tested value in all calculations until the efficiency is demonstrated to be above the permit limit through a new test.</p>	<p>Title I Condition: Limit to avoid classification as major source or modification under 40 CFR Section 52.21 and 40 CFR Section 63.2; Minn. R. 7007.0800, subps. 4 and 5</p>
<p>Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken.</p>	<p>Minn. R. 7007.0800, subps. 4, 5, and 14</p>
<p>The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.</p>	<p>Minn. R. 7007.0800, subp. 14</p>
<p>PERFORMANCE TESTING</p>	<p>hdr</p>
<p>Performance Test: due 180 days after Permit Issuance (-002) for VOC destruction efficiency of CE 008.</p>	<p>Minn. R. 7017.2020, subp. 1</p>

TABLE B: SUBMITTALS

06/30/05

Facility Name: Brown Printing Co - Waseca Division
Permit Number: 16100013 - 002

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send any application for a permit or permit amendment to:

Permit Technical Advisor
Permit Section
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Unless another person is identified in the applicable Table, send all other submittals to:

Supervisor
Compliance Determination Unit
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Computer Dispersion Modeling Information	due 1,096 days after Permit Issuance. Submit modeling data as specified in MPCA guidance for Modeling Information Requests (for NOx). This modeling information is for data collection purposes, no modeling analysis is required at this time. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Total Facility
Performance Test Notification (written)	due 30 days before Performance Test for CE 008.	CE008
Performance Test Plan	due 30 days before Performance Test for CE 008.	CE008
Performance Test Report - Microfiche Copy	due 105 days after Performance Test for CE 008.	CE008
Performance Test Report	due 45 days after Performance Test for CE 008.	CE008
Testing Frequency Plan	due 60 days after Performance Test (for CE 008). The testing frequency for subsequent performance tests will be based on the MPCA guidance that is in effect at the time of the Performance test, and changes may be agreed between the Agency and Permittee. Test frequency parameters may be proposed in the written Performance Test Notification or Test Plan, and reviewed during the Performance Test Pre-test Meeting.	CE008

TABLE B: RECURRENT SUBMITTALS

06/30/05

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013 - 002

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 01/13/2003 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year starting 01/13/2003 (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL

Facility Name: Brown Printing Co - Waseca Division

Permit Number: 16100013-002

Appendix I –VOC/HAP Calculation Methods

VOC Calculation Methods

The Permittee shall calculate monthly VOC emissions as follows:

$$\text{VOC (tons)} = A + B + C + D + E + F + G - H$$

A = VOC emissions, in tons, from ink usage

$$A = [(U1 \times V1 \times (1-R) \times (1-DE)) + (U2 \times V2 \times (1-R) \times (1-DE)) + \dots]/2000$$

U# = amount of each VOC-containing material ink purchased in the previous month, in pounds

V# = weight percent VOC in U#, as a fraction (e.g. 10% is 0.10)

R = weight fraction of ink retained in the product, 0.20

DE = destruction efficiency of the applicable control system.

B = VOC emissions, in tons, from fountain solution usage that is carried over to the dryer

$$B = [(U1 \times V1 \times (CA) \times (1-DE)) + (U2 \times V2 \times (CA) \times (1-DE)) + \dots]/2000$$

U# = amount of each VOC-containing fountain solution purchased in the previous month, in pounds

V# = weight percent VOC in U#, as a fraction (e.g. 10% is 0.10)

CA = carryover of fountain solution to the dryer, 0.70

DE = destruction efficiency of the applicable control system.

C = VOC emissions, in tons, from fountain solution usage that is not carried over to the dryer

$$C = [(U1 \times V1 \times (1-CA)) + (U2 \times V2 \times (1-CA)) + \dots]/2000$$

U# = amount of each VOC-containing fountain solution purchased in the previous month, in pounds

V# = weight percent VOC in U#, as a fraction (e.g. 10% is 0.10)

CA = carryover of fountain solution to the dryer, 0.70.

D = VOC emissions, in tons, from automatic blanket wash that is carried over to the dryer

$$D = [(U1 \times V1 \times (CA) \times (1-DE)) + (U2 \times V2 \times (CA) \times (1-DE)) + \dots]/2000$$

U# = amount of each VOC-containing automatic blanket wash solution purchased in the previous month, in pounds

V# = weight percent VOC in U#, as a fraction (e.g. 10% is 0.10)

CA = carryover of automatic blanket wash to the dryer, 0.40.

DE = destruction efficiency of the applicable control system.

E = VOC emissions, in tons, from automatic blanket wash that is not carried over to the dryer

$$E = [(U1 \times V1 \times (1-CA)) + (U2 \times V2 \times (1-CA)) + \dots]/2000$$

U# = amount of each VOC-containing automatic blanket wash solution purchased in the previous month, in pounds

V# = weight percent VOC in U#, as a fraction (e.g., 10% is 0.10)

CA = carryover of automatic blanket wash to the dryer, 0.40.

F = VOC emissions, in tons, from manual wash solution

$$F = [(U1 \times V1 \times (CA)) + (U2 \times V2 \times (CA)) + \dots]/2000$$

U# = amount of each VOC-containing manual wash solution purchased in the previous month, in pounds

V# = weight percent VOC in U#, as a fraction (e.g., 10% is 0.10)

CA = weight fraction of wash solution remaining in rags as waste, 0.50.

G = VOC emissions, in tons, from all other VOC-containing materials

$$G = [(U1 \times V1) + (U2 \times V2) + \dots]/2000$$

U# = amount of each VOC-containing purchased in the previous month, in pounds

V# = weight percent VOC in U#, as a fraction.

H = the amount of VOC shipped in waste, other than rags, in pounds

$$H = [(W1 \times V1) + (W2 \times V2) + \dots]/2000$$

W# = amount, in pounds, of each VOC-containing waste shipped in the previous month. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero.

V# = weight percent VOC in W#, as a fraction (e.g., 10% is 0.10).

Total and Individual HAP Calculation Methods

The Permittee shall calculate monthly emissions of each individual HAP and total HAP, separately, as follows:

$$\text{Pollutant (tons)} = A + B + C + D + E + F + G - H$$

Pollutant = each individual HAP and total HAP

A = pollutant emissions, in tons, from ink usage

$$A = [(U1 \times V1 \times (1-R) \times (1-DE)) + (U2 \times V2 \times (1-R) \times (1-DE)) + \dots]/2000$$

U# = amount of each HAP-containing material ink purchased in the previous month, in pounds

V# = weight percent of pollutant in U#, as a fraction (e.g., 10% is 0.10)

R = weight fraction of ink retained in the printed material until drying, 0.20

DE = destruction efficiency of the applicable control system.

B = pollutant emissions, in tons, from fountain solution usage that is carried over to the dryer

$$B = [(U1 \times V1 \times (CA) \times (1-DE)) + (U2 \times V2 \times (CA) \times (1-DE)) + \dots]/2000$$

U# = amount of each HAP-containing fountain solution purchased in the previous month, in pounds

V# = weight percent of pollutant in U#, as a fraction (e.g., 10% is 0.10)

CA = carryover of fountain solution to the dryer, 0.70

DE = destruction efficiency of the applicable control system.

C = pollutant emissions, in tons, from fountain solution usage that is not carried over to the dryer

$$C = [(U1 \times V1 \times (1-CA)) + (U2 \times V2 \times (1-CA)) + \dots]/2000$$

U# = amount of each HAP-containing fountain solution purchased in the previous month, in pounds

V# = weight percent of pollutant in U#, as a fraction (e.g., 10% is 0.10)

CA = carryover of fountain solution to the dryer, 0.70.

D = pollutant emissions, in tons, from automatic blanket wash that is carried over to the dryer

$$D = [(U1 \times V1 \times (CA) \times (1-DE)) + (U2 \times V2 \times (CA) \times (1-DE)) + \dots]/2000$$

U# = amount of each HAP-containing automatic blanket wash solution purchased in the previous month, in pounds

V# = weight percent of pollutant in U#, as a fraction (e.g., 10% is 0.10)

CA = carryover of automatic blanket wash to the dryer, 0.40.

DE = destruction efficiency of the applicable control system.

E = pollutant emissions, in tons, from automatic blanket wash that is not carried over to the dryer

$$E = [(U1 \times V1 \times (1-CA)) + (U2 \times V2 \times (1-CA)) + \dots]/2000$$

U# = amount of each HAP-containing automatic blanket wash solution purchased in the previous month, in pounds

V# = weight percent of pollutant in U#, as a fraction (e.g., 10% is 0.10)

CA = carryover of automatic blanket wash to the dryer, 0.40.

F = pollutant emissions, in tons, from manual wash solution

$$F = [(U1 \times V1 \times (CA)) + (U2 \times V2 \times (CA)) + \dots]/2000$$

U# = amount of each HAP-containing manual wash solution purchased in the previous month, in pounds

V# = weight percent of pollutant in U#, as a fraction (e.g., 10% is 0.10)

CA = weight fraction of wash solution remaining in rags as waste, 0.50.

G = pollutant emissions, in tons, from all other HAP-containing materials

$$G = [(U1 \times V1) + (U2 \times V2) + \dots] / 2000$$

U# = amount of each HAP-containing purchased in the previous month, in pounds

V# = weight percent of pollutant in U#, as a fraction (e.g., 10% is 0.10).

H = the amount of HAP shipped in waste, other than rags, in pounds

$$H = [(W1 \times V1) + (W2 \times V2) + \dots] / 2000$$

W# = amount, in pounds, of each HAP-containing waste shipped in the previous month.

If the Permittee chooses to not take credit for waste shipments, this parameter would be zero.

V# = weight percent of pollutant in W#, as a fraction (e.g., 10% is 0.10).

APPENDIX II – INSIGNIFICANT ACTIVITIES

Insignificant Activities and General Applicable Requirements

The table below lists the insignificant activities that are currently at the Facility and their associated general applicable requirements.

Minn. R. 7007.1300, subp.	Rule Description of the Activity	General Applicable Requirement
3(A)	Fuel use: space heaters fueled by natural gas or propane.	Minn. R. 7011.0515 (PM and opacity)
3(D)(2)	Equipment venting PM/PM ₁₀ inside a building, provided that emissions from the equipment are filtered through an air cleaning system and vented inside of the building 100% of the time. (maintenance shop equipment)	Minn. R. 7011.0715 (PM and opacity)
3(I)	Individual emissions units at a stationary source, each of which have a PTE of the following pollutants in amounts less than: 2 tpy of CO and 1 tpy each of NO _x , SO ₂ , PM/PM ₁₀ , VOC, and ozone. (i.e., gluing operations)	Minn. R. 7011.0715 (PM and opacity)

Under Minn. R. 7007.1250, subp. 1(A), the Permittee may add insignificant activities to the stationary source throughout the term of the permit without getting permit amendments. Certain exclusions apply and are listed in Minn. R. 7007.1250, subp. 2. In addition, this permit specifically prohibits the Permittee from making any modifications that would make the source major under NSR. The following table is a listing of the insignificant activities that the Permittee is somewhat likely to add and their associated applicable requirements.

Minn. R. 7007.1300, subp.	Rule Description of the Activity	General Applicable Requirement(s)
3(H)(5)	Blueprint copiers and photographic processes;	Minn. R. 7011.0110 (opacity)
3(H)(4)	Brazing, soldering or welding equipment.	Minn. R. 7011.0715 (PM and opacity)
3(H)(8)	Cleaning operations: alkaline/phosphate cleaners and associated cleaners.	Minn. R. 7011.0715 (PM and opacity)
3(K)	Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source.	Minn. R. 7011.0715 (PM and opacity)

APPENDIX III - Web Offset Heat Press Description

EU	SV	CE	GP	Emission Unit Description
001			001	Web Offset press 1221
002			001	Web Offset press 1219
003			001	Web Offset press 1211
004			001	Web Offset press 1212
005			001	Web Offset press 1213
006			001	Web Offset press 1214
007			001	Web Offset press 1222
008			001	Web Offset press 1216
009			001	Web Offset press 1217
010			001	Web Offset press 1218
011	001	001	002, 003, 005	Thermal Oxidizer (removed)
012	002	002	002, 003, 005	Thermal Oxidizer (removed)
013	003	003	002, 003, 005	Thermal Oxidizer (removed)
014	004			Waste Incinerator (shut down)
015	005	004	008	Paper Waste Recycling System
016	006	005	008	Paper Waste Recycling System
017	007	006	008	Paper Waste Recycling System
018	008	007	008	Paper Waste Recycling System
019	009		006	Boiler A
020	010		006	Boiler B
021	011			Press Room "Fugitives"
022	012			Bindery "Fugitives"
023	013			Prep Area "Fugitives"
024			001	Web Offset press 1220
025	014	008	002, 003, 005	Thermal Oxidizer
026	015			Chiller Unit
027			001	Web Offset press 1223
028			001	Web Offset press 1224
029			001	Web Offset press 1225 (future)
030	016		007	Boiler C
031	017	009	002, 004, 005	Regenerative Thermal Oxidizer
032	018	010	002, 004, 005	Regenerative Thermal Oxidizer
033	019		007	Boiler D

* Web Offset presses emit into a common header. From the common header, the emissions discharge through the thermal oxidizers. Hence, a specific SV and CE is not assigned.

Appendix IV – Summary of the Maximum Impressions and Design Air Flow Rates

Emission Unit No.	Press No.		Maximum Impressions No.	Design Flow Rate (SCFM)
EU-001	1221	Single	44,333.3	1,980
EU-002	1212	Double	114,000.	4,857
EU-003	1211	Double	101,333.3	4,086
EU-004	1213	Double	114,000.	4,597
EU-005	1214	Double	139,333.3	5,616
EU-006	1222	Single	44,333.3	1,831
EU-007	1216	Double	139,333.3	5,619
EU-008	1217	Double	139,333.3	5,175
EU-009	1219	Single	40,058.3	1,831
EU-010	1218	Double	139,333.3	5,175
EU-024	1220	Double	285,000.	12,143
EU-027	1223	Double	194,160	8,122
EU-028	1224	Double	194,160	8,122
EU-029	1225	Double	194,160	8,122
Totals			1,900,000	74,452

Appendix V – Regenerative Thermal Oxidizer Flow Rate versus Residence Time

Combustion chamber volume: 687 ft³

Flow rate		Residence time (sec)
SCFM	ACFM @ 1600 F	
6,000	23,321	1.77
7,000	27,208	1.52
8,000	31,094	1.33
9,000	34,981	1.18
10,000	38,868	1.06
11,000	42,755	0.96
12,000	46,642	0.88
13,000	50,528	0.82
14,000	54,415	0.76
15,000	58,302	0.71
16,000	62,189	0.66
17,000	66,075	0.62
18,000	69,962	0.59
19,000	73,849	0.56
20,000	77,736	0.53
21,000	81,623	0.51
22,000	85,509	0.48
23,000	89,396	0.46
24,000	93,283	0.44
25,000	97,170	0.42

TECHNICAL SUPPORT DOCUMENT
For
DRAFT/PROPOSED AIR EMISSION PERMIT NO. 16100013-002

This technical support document is intended for all parties interested in the draft/proposed permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp.1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft/proposed permit.

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC Code:2752)
Brown Printing Company, Waseca Division 2300 Brown Avenue P.O. Box 1549 Waseca, Minnesota 55093-0517	Same as Owner/Operator
Contact: Allan Rose Phone: (507) 835-0368	

1.2. Description of the Facility

Brown Printing is a commercial printing facility. Since 1963, this facility has been in operation. The stationary source currently consists of eleven web offset printing presses, press dryers, and pollution control equipment. The main sources of emissions are volatile organic compounds (VOCs) and Hazardous Air Pollutant (HAPs). The facility also has several activities that qualify as insignificant activities under Minn. R. 7007.1300, subp. 3.

Emissions from all the heat web offset presses are controlled by one thermal oxidizer and two regenerative thermal oxidizers. Common ductwork (headers) allows any combination of the three oxidizers to control any operating combination of presses.

The facility is non-major for all Prevention of Significant Deterioration (PSD) and HAP pollutants. The facility has taken the VOC and HAP limits to remain non-major. The other unlimited criteria pollutant emissions are below PSD thresholds.

1.3 Permit History

Brown Printing has an extensive air emissions permit history. The permit numbers and issuance dates follow.

<u>Permit Amendment Number</u>	<u>Date Issued</u>
16100013-001 (Total facility operating permit)	January 13, 2003
16100013-011 (Amendment #7)	April 4, 2000
16100013-010 (Amendment #6)	April, 1999
39800013-009 (Amendment #5)	May 24, 1996
16100013-008 (Amendment #4)	November 28, 1995
16100013-006 (1556-94-I/O-1); Amendment #3)	June 18, 1994
1556-88-OT-1 (Amendment #2)	May 18, 1990
1556-88-OT-1 (Amendment #1)	August 26, 1988

As for a recent permit history, the original facility emission air emissions permit was issued in 1988. In 1994, the permit was amended (amendment #3) by adding Press No. 1217. In 1995, the permit was amended (amendment #4) by adding Press No. 1218. In 1996, the permit was amended by adding a chiller unit. In April 1999, the permit was amended by adding a Press No. 1220. This also called for the removal of Presses No. 1210 and 1211. In April 2000, an amendment was issued to allow for two changes. The first change clarified the timing of the removal of Press No. 1210. The second modification removed the requirement that Press No. 1211 must be removed.

Amendment #16100013-010 added a federally enforceable overall VOC cap to avoid major source classification for New Source Review (40 CFR § 52.21). The VOC emission limit was 234 tons per year (not including VOC emissions from the combustion of natural gas/LPG). Amendment #16100013-010 also placed limits on HAPs emissions. The HAPs emissions were restricted below the major source thresholds (i.e., synthetic minor). Amendment #16100013-010 made these restrictions federally enforceable. These limits as well as other permit amendment limits are carried forward in this permit.

1.4. Description of any Changes Allowed with this Permit Issuance

This amendment action authorizes several changes:

1. As part of the flex cap, the permit includes a limit on the total facility's overall web offset press capacity. During the Title V issuance, the facility requested an impression limit that assumed no projected increase. At the time, they believed that their overall press capacity was adequate for the projected future. Recently, the facility decided to add two new presses. With the addition of the new presses, the overall impression capacity needs to be increased. This amendment will authorize the increase of impressions from 1,300,391.7 to 1,900,000 per hour. It is noted the addition of these new presses was pre-authorized, but permitted impression capacity was not available. New calculations based on the 1,900,000 impressions per hour have been submitted. The overall VOC and HAP limits remain in place.

2. This permit authorizes the change of CE 008 (existing thermal oxidizer) from a back-up unit to a production unit.
3. This permit also “cleans up” miscellaneous permit language. The clean up language largely is a result of the following:
 - i) Brown Printing has already replaced three oxidizers with two regenerative thermal oxidizers in accordance with its previous permit.
 - ii) Brown Printing is still pre-authorized to add one additional press. This is allowed if the overall impression limit remains below 1,900,000 per hour.
 - iii) All of the presses emit into a common header. The three oxidizers are fed off the common header. Permit language has been provided to ensure that the number of presses in operation, at one time, does not exceed the oxidizer capacity. Previously, this was done by providing a maximum number of presses to each oxidizer. This amendment corrects that language by recognizing that each oxidizer has a design air flow intake. The language provides that the sum of the individual air flow from each press cannot exceed the design air flow intake for each oxidizer.
 - iv) This amendment also cleans up the language pertaining to the RTO’s combustion chamber temperature and residence time operating parameters. It is recognized that the oxidizers have a variable air flow intake. The RTO were still being proposed during the previous permit action (-002). In this amendment (-002), the RTOs are provided with a combustion temperature of 1600 degree F. The RTOs are also provided with the manufacturer’s warranty chart for residence time versus air flow. The manufacturer’s inspection frequency checklist is included in GP 004.
 - v) Removed Group 3, in Delta, because it only consisted of CE 008. All GP 003 requirements were transferred to CE 008.
 - vi) GP 007 is eliminated and the emission units are transferred to GP 006.

The overall VOC and HAP emission limits and compliance demonstration requirements remain in this Part 70 permit.

1.4. Facility Emissions:

There are no Title I limited emission increases from this amendment action. The VOC and HAP limits remain in place. The true emissions will increase due to the addition of the new capacity. However, this increase remains capped by the existing limits.

1.5. Facility Emissions

Table 2. Total Facility Potential to Emit Summary:

EU #	SV #	Emission Unit Description	PM tpy	PM ₁₀ tpy	SO ₂ tpy	NO _x Tpy	CO Tpy	VOC tpy	Pb tpy	Single HAP tpy	All HAPs tpy
		Combustion	6.6	6.6	0.53	140.7	73.58	4.82	-	1.58	1.65
		Paper Waste	24.8	24.8							
		Press Operations						847.1		28.88	40.96
		Total (unlimited)	31.4	31.4	0.53	140.7	73.58	851.9	-	30.46	42.61

	PM tpy	PM ₁₀ tpy	SO ₂ tpy	NO _x Tpy	CO Tpy	VOC tpy	Pb tpy	Single HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions	31.4	31.4	0.53	140.7	73.58	232.5	-	9.0	22.1
2001 Press Operation Actual Emissions* (combustion, paper waste not included)	5	5	0	14	5	124.9	0	5.05	7.25

Note:

- 1) The press operation unlimited potential emissions were prepared by the Permittee.

Table 3. Facility (TF) and Permit Classification

Classification (put x in appropriate box)	Major/Affected Source	*Synthetic Minor	*Minor
Prevention of Significant Deterioration		VOC, NO _x , CO	SO ₂ , PM, PM ₁₀
Nonattainment Area Review	N/A	N/A	N/A
Part 70 Permit Program	VOC		
Part 63 National Emissions Standards for Hazardous Air Pollutants (NESHAPs)		X	

* Refers to potential emissions that are less than those specified as major by 40 CFR 52.21, 40 CFR pt. 51 Appendix S, 40 CFR pt. 70, and 40 CFR pt. 63.

** It is noted that the facility would be a minor for NO_x and CO if it had not taken the facility fuel consumption limit. In other words, the limit was not taken to be non-major for PSD. Existing and projected emissions are not of the magnitude to exceed the PSD thresholds.

2. Regulatory and/or Statutory Basis

New Source Review

The Facility has taken limits to avoid major source classification for New Source Review (40 CFR § 52.21) program. The facility is an existing non-major source under New Source Review regulations. No new changes are authorized by this permit.

Part 70 Permit Program

The facility remains a major source under the Part 70 permit program.

New Source Performance Standards (NSPS)

There are no New Source Performance Standards applicable to the operations at this facility.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The printing and publishing NESHAP does not apply, since they are not a flexographic printer (as defined in 40 CFR § 63.822(a)).

Minnesota State Rules

Example: Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0515 Standards of Performance for New Indirect Heating Equipment
- Minn. R. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment

Table 4 gives a summary of the significant sources of emissions and the applicable regulations and standards.

Table 4. Regulatory Overview of Units Affected by the Permit Amendment (-002)

Level*	Applicable Regulations	Comments:
GP 001 (Total Facility Limits)	Minn. R. 7007.0800, subp. 2	Increases limit on overall facility impression capacity of all web offset presses. The facility can install, add, or modify the overall press capacity provided that this impression capacity is not exceeded. The permit PTE is based on the permitted impression capacity. This limit was taken as part of the flex cap. It provides the maximum capacity allowed under the cap.
CE 008 (Thermal Oxidizer)	Minn. R. 7017	Minnesota Performance Testing Rule. Requirements to test specific oxidizers for VOC control efficiencies.
GP 004 (Regenerative Thermal Oxidizers)	40 CFR § 52.21	Specify combustion chamber temperature and residence time operating parameter requirements to limit VOC PTE to avoid major source classification under PSD.

*Level -- EU = emission unit, GP = group, TF = total facility, SV = stack/vent, CE = control equipment

3. Technical Information

3.1. Pre-authorized Changes

As briefly described earlier, the permit pre-authorizes certain changes. That is provided that all permit conditions are met. The Permittee may install one new press, modify, or replace the web offset presses. The Permittee may also install new Dc boilers.

While the permit allows the replacement or installation of certain equipment, it does not allow any changes that would trigger a new applicable requirement not contained in the permit. The permit sets 12-month rolling limits on VOC and HAP emissions, so annual VOC and HAP emissions cannot increase due to any of the pre-authorized changes. All applicable requirements and necessary monitoring are in the permit. The replacement of existing units with similar technology and capacity units, and the changing or modification of existing units as specified in the permit, will not cause an emissions increase; so they are not modifications and can be made without the need for an amendment.

3.2. Potential to Emit Calculations

Attachment 1 to this TSD contains detailed spreadsheets and supporting information prepared by the Permittee. The Permittee's press operation calculations are based on the 1,900,000 impressions per hour. The Permittee's calculations are based on the ratio of the new facility

impression capacity to the 2004 actual usage. This is not a true PTE in that the worst chemical is not being the used the maximum time. It is recognized, however, that the VOC and HAPs emissions remain capped.

The PTEs are based on the current coatings and formulations for this Facility. The Facility can change materials at any time, as long as the new materials continue to meet the various permit limits. While the numbers and chemicals in Attachment 1 are intended to project the various HAPs the Facility may emit, the Facility is not currently restricted to these coatings and formulations; therefore, the HAPs and PTEs of those HAPs may change after permit issuance.

In general, VOC emissions may also be PM/PM₁₀ condensables. If they show up in a PM/PM₁₀ test as condensable, VOC emissions should be counted as such for the purposes of permitting applicability and determining compliance. Since these printing processes don't otherwise generate particulate matter, stack testing for PM/PM₁₀ is not likely. In terms of applicability, it was decided that for these processes, the VOCs leaving the oxidizers are not likely to condense (low molecular weight hydrocarbons). The controlled VOC emissions are not considered condensable particulate for applicability purposes.

3.3 Printing Operations

The Permittee completed calculations using the MPCA guidance for printers. The basic procedure is a mass balance approach assuming certain percentages of materials are captured by the dryer and vented to the control device.

3.4 Permit Calculations

Section 3.8, of this TSD, explains the various monitoring required by the permit. For the VOC and HAP limits, this includes calculating actual emissions on a monthly basis. This involves using specified formulas from Appendix I of the permit. These formulas are based on Minnesota Pollution Control Agency (MPCA) guidance for calculating actual emissions from printers. Specifically, the calculations assume that 100 % of inks are "carried over" to the dryer (i.e., capture efficiency) and therefore controlled, 70 % of fountain solutions are captured, 40 % of blanket wash is captured, and 50 % of manual wash solutions are assumed to stay in the waste rags shipped off-site.

These same assumptions are used for the HAP calculations. While these assumptions might not apply to all 188 listed HAPs, they do apply to the HAPs used at printers – all are similar solvent materials used in the various wash solutions. In terms of the control efficiencies given for VOC versus HAP, it was determined that due to the types of HAPs used at this facility, the VOC efficiency is representative of the HAP efficiency. Testing for specific HAP destruction efficiencies is not reasonable since they are small components of the vapor stream (e.g., only used in cleanup and a low percentage of those materials).

This permit continues to not require the Permittee to maintain records of vapor pressure for its fountain solution, automatic blanket wash, and manual wash solution. As based on MPCA guidance for such solutions with vapor pressure > 10 mm Hg, the carry over factor decreases. During the site visit, the MSDS of the most common solutions were reviewed. All had vapor pressures < 10 mm Hg. The Permittee did not anticipate using any such solutions, in the future, that would have vapor pressures > 10 mm Hg. Accordingly, the permit assumes that all such solutions will be < 10 mm Hg.

3.5 Impression Limit

Under the flex cap, the issue arose as to how to allow for future individual press capacity. To address this issue, press capacity was addressed via impressions. Impressions were chosen as a means to limit the overall facility capacity. By using impressions, individual units do not have to be sized, now, for future use. The facility is allowed to choose whatever individual capacity is needed, when the need arises, provided that it does not exceed the impression capacity as well as other permit terms.

In the 2003 Part 70 permit issuance, the overall press PTE is based on the capacity of 1,300,391 impressions per hour. This is the relative current capacity as well as the projected capacity. If needed, it was recognized that this permit could still be amended with the Minnesota 7007 permit amendment rules. As stated previously, the facility's projected impression capacity has increased 1,900,000 impressions per hour. Hence, the impression capacity increase is being authorized in this amendment.

3.6 CE 008

In the 2003 Part 70 permit issuance, the facility intended to use CE 008 strictly as backup (e.g. both RTOs are down). At the time, the facility intended to operate CE 008 less than two weeks a year. Under this amendment (-002), the facility will be authorized to utilize CE 008 on a production mode (i. e., not just backup). In the 2003 permit, CE 008 was not tested due to its backup nature. 1996 was the last time CE 008 was tested. Given its production mode, CE 008 will be tested as part of this amendment action.

3.7 Community Involvement

Brown Printing has had an extensive history of air emission permit actions. In the most recent years, there has not been any public comments received during any of its public comment periods. Moreover, the overall VOC and HAP emission limits are remaining in place. Hence, it was decided that there was no additional need for community involvement beyond the public notice.

3.8 Total Facility Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a Facility to have sufficient knowledge of the Facility to certify that the Facility is in compliance with all applicable requirements. In evaluating the monitoring included in the draft permit for the remaining applicable requirements, the MPCA considered the following:

- the initial compliance method;
- the format of the applicable requirement;
- the likelihood of violating the applicable requirement;
- whether add-on controls are necessary to meet the emission limit;
- the variability of emissions over time;
- the type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- the technical and economic feasibility of possible periodic monitoring methods; and
- the kind of monitoring found on similar units.

Table 5 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate

Table 5. Amendment (-002) Affected Emission Units Subject to Periodic Monitoring

EU/ GP/ CE	Emission limit (Basis)	Additional Monitoring	Discussion
Total Facility	Combustion Capacity \leq 210 MMBtu/hr	Recordkeeping and notifications of changes and reporting of total capacity in annual report.	
VOC Limits: GP 001 GP 001 continued	VOC \leq 232.5 tons per year, on a 12-month rolling basis (limit to avoid NSR) Individual HAP \leq 9.0 tpy on a 12-month rolling basis (avoid NESHAP) Total HAP \leq 22.1 tpy on a 12-month	Recordkeeping: Purchase records of coating usage; On-going MSDS records of coating contents; Monthly calculations of emissions.	Purchase records will continue to be used. Calculations will continue on a monthly basis. Credit can be taken for waste materials collected and shipped off-

EU/ GP/ CE	Emission limit (Basis)	Additional Monitoring	Discussion
	<p>rolling basis (avoid NESHAP)</p> <p>Modification and replacement of existing units</p>	<p>On-going record of any equipment that is replaced</p>	<p>site (dispensed - waste = emissions). Since this is done at most monthly, calculating emissions more frequently than monthly would result in large spikes (while waste is accumulating) and dips (when waste is shipped) – resulting in possible paperwork violations and days with negative emissions. For these reasons, 12-month rolling limits are reasonable for this Facility.</p> <p>The VOC and total HAP limits are set low enough to account for the increased VOC and HAP emissions from the pre-authorized combustion sources.</p> <p>Any replaced equipment must meet all the applicable requirements in the permit. If a changed unit would trigger a different requirement, the change cannot be made without an amendment. In addition, emissions must be tracked and calculated as required by the permit.</p> <p>The permit also requires that all units are labeled and inventoried (at TF level).</p>
<p>Press Operations: GP 002</p> <p>Thermal Oxidizers: CE 008</p>	<p>Control requirement</p> <p>VOC: Control Efficiency of 98% (limit to avoid NSR + NESHAP)</p> <p>Temperature limit ≥ 1300 °F at the combustion chamber</p>	<p>See CE 008 and GP 004 for monitoring of controls</p> <p>Temperature monitoring, Recordkeeping, O & M, inspections</p>	<p>Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance.</p> <p>Temperature monitoring is continuing.</p>

EU/ GP/ CE	Emission limit (Basis)	Additional Monitoring	Discussion
			Thermal oxidizer CE 008 will be retested as a result of this amendment -002.
Regenerative Thermal Oxidizers: GP 004	VOC: Control Efficiency of 98% (limit to avoid NSR + NESHAP) Temperature limit ≥ 1600 °F at the combustion chamber	Temperature monitoring, Recordkeeping, O & M, inspections	Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance. Temperature monitoring will be required.
Direct Heating Equipment: GP 005	PM: \leq variable depending on airflow Opacity: ≤ 20 % (Minn. R. 7011.0610)	None	All units use natural gas or LPG; therefore, the likelihood of violating either of the emission limits is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limits by only burning natural gas or LPG. Since this is a permit condition, the semi-annual deviation report will document any deviations from this condition.

3.9 Deviations from Delta Guidance

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. One area where this permit deviates slightly from Delta guidance is in the use of appendices. While appendices are fully enforceable parts of the permit, in general, any requirement that the MPCA thinks should be tracked (e.g., limits, submittals, etc.), should be in Table A or B. The main reason is that the appendices are word processing sections and are not part of the tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Staff must generate these.

Appendix I contains the specific calculation procedures for VOC and HAP emissions. These procedures are too complex to enter into Delta and must go in an Appendix. Appendix II is a listing of the Facility's Insignificant Activities and their applicable requirements. This is a fairly standard way to include these in the permit, since it is highly unlikely the MPCA would need to

have these as trackable items in Delta. Appendix III is a summary of the various emission units, stack vents, control equipment, groups, and emission unit description. This documents the correlation of specific emissions units to specific control equipment. Delta does not show this data as part of the “associated items” in Table A of the permit. Appendix IV contains the summary of the individual press maximum impressions and design air flow rates.

Another area where the permit deviates from guidance is in the use of groups for requirements that apply to individual pieces of equipment. This is done in order to streamline the permit.

GP 009 was created strictly for Delta needs. Delta does not allow for a total facility fuel combustion PTE entry. Accordingly, GP 009 was created for this reason. Otherwise, the insignificant activities would not have been included in the Delta PTEs.

3.10 Insignificant Activities

There are no insignificant activities included in this amendment.

3.11 Comments Received

Public Notice Period: May 5, 2005 – June 6, 2005

EPA 45-day Review Period: May 5, 2005 – June 21, 2005

Comments were not received from the public during the public notice period.

Comments were not received from EPA during their review period.

4. Conclusion

Based on the information provided by the Brown Printing, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 16100013-002 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Bruce Braaten (permit writer/engineer)
Jess Richards (enforcement)
John Chikkala (peer reviewer)

Attachments: 1. Permittee’s Calculation Spreadsheets
2. Regenerative thermal oxidizer’s maintenance manual inspection checklist (Section 4.1)