

**COMMONWEALTH OF VIRGINIA**  
**Department of Environmental Quality**  
**Valley Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS**

R. R. Donnelley & Sons Company  
Harrisonburg, Virginia  
Permit No. VRO81000

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, R. R. Donnelley & Sons Company has applied for a renewal of its Title V Operating Permit for its Harrisonburg book printing facility. The Department has reviewed the application and has prepared a Title V Operating Permit.

Engineer/Permit Contact:



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Date: 9/12/16

## **FACILITY INFORMATION**

### Permittee

R. R. Donnelley & Sons Company  
2347 Kratzer Road  
Harrisonburg, Virginia 22802-8303

### Facility

R. R. Donnelley & Sons Company  
2347 Kratzer Road  
Harrisonburg, Virginia 22802-8303

## **SOURCE DESCRIPTION**

### NAICS Codes:

323117 (formerly SIC Code: 2732) – Book printing

R. R. Donnelley & Sons Company (RRD) produces hard- and soft-cover commercial trade books using offset lithographic printing. The facility operates 16 heatset web presses, one sheetfed (coldset) press, three ink-jet digital presses, and binding processes. Press operations use inks, fountain solutions, and blanket wash (cleaning solvents). In the binding area, printed materials are assembled, bound into book blocks, and then further processed into hard- and soft-cover books. Edge trimming and roughing and adhesive application are conducted at the binding lines. Volatile organic compound (VOC) emissions result primarily from evaporation of solvent in the inks, fountain solutions, and cleaning solvents. Particulate emissions are generated by the handling of paper trim and dust generated at the binding lines. Adhesive application at the binding lines is an additional source of VOC emissions.

The facility is a Title V major source of VOC and HAPs (glycol ethers, which are also VOCs). This source is located in an attainment area for all pollutants, and is a PSD minor source. The facility was previously permitted under a Minor NSR Permit issued on February 15, 2005 and amended August 11, 2005, April 28, 2006, February 23, 2007, April 30, 2007, June 21, 2007, and November 10, 2010.

## **COMPLIANCE STATUS**

The facility is inspected at least once every two years. The most recent full compliance inspection of the facility was conducted on May 15, 2014. RRD was found to be operating in compliance during the inspection. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements.

**CHANGES SINCE INITIAL PERMIT**

During its five-year term, RRD’s Title V permit was modified one time to reflect changes at the facility, as detailed below.

Date	Permit action	Reason for action
March 15, 2011	Renewal Issuance	N/A
August 9, 2015	Significant modification	<ul style="list-style-type: none"> <li>- Increase the VOC emission limits for the three Proteus ink-jet digital printing presses (105, 106, and 107)</li> <li>- Combine the VOC throughput and emission limits on all five Proteus printing Presses 105 – 109, which includes the three Proteus presses (105 – 107) that were permitted and installed in 2010, and the two Proteus presses (108 – 109) that were permitted and installed in 2012</li> <li>- Rename the equipment reference number from Press 767 to Press 786 following modification of the Press 767 which replaced two 9” units with two 8” units;</li> <li>- Remove Presses 768 and 769 from the permit. These presses have been removed from the facility.</li> </ul>

Please refer to the statement of basis documents for the listed modification for further details. The renewed Title V permit reflects this modification plus the applicability of additional requirements as described below:

Pursuant to 40 CFR 63, Subpart DDDDD, applicable requirements for have been included in a new Facility Wide Conditions section. Also, the Inapplicable Requirements section of the permit has been expanded to include some federal regulations that have been promulgated since issuance of the last permit.

**EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION**

*Table I. Emission Units - R. R. Donnelley & Sons Company - Harrisonburg Manufacturing North*

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
<b>Sheetfed Offset Printing Equipment</b>							
751	51A, B, and C	1989 Heidelberg 72FL sheetfed offset printing press	11,000 impressions per hour	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
<b>Web Offset Printing Equipment</b>							
765	65	1995 Toshiba OA two-web offset printing press	38,000 impressions per hour (maximum impression size 34" x 19.375")	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
766	66	1996 Toshiba OA two-web offset printing press	38,000 impressions per hour (maximum impression size 34" x 19.375")	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
770	70	1985 Toshiba OA two-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")	Regenerative Thermal Oxidizer	RTO1	VOC	1/5/12 as amended 8/5/14 and 3/26/15

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
771	71	1985 Toshiba OA one-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
772	72	1989 Toshiba OA two-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")	Regenerative Thermal Oxidizer	RTO1	VOC	1/5/12 as amended 8/5/14 and 3/26/15
773	73	1994 Toshiba OA two-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
782	82	1983 Harris M110 two-web offset printing press	38,000 impressions per hour (maximum impression size 26.5" x 17.75")	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
783	83	2003 Harris M110B two-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
784	84	1993 Harris M110B two-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
785	85	1992 Harris M110B two-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
786	86	Harris Graphics M110A printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
787	87	1983 Harris M110B two-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
790	90	Timson T48A one-web offset printing press	31,400 impressions/hr	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
791	91	2007 Timson T48A one-web offset printing press	37,000 impressions/hr	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
<b>Ink-Jet Digital Printing Equipment</b>							
105	-	Ink-Jet Digital Printing Press with coating unit – Model 6034988 (2010)	526,620 pages per hour 2.52 gallons of ink per hour 2.20 gallons of coating per hour	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
106	-	Ink-Jet Digital Printing Press with coating unit – Model 6034988 (2010)	526,620 pages per hour 2.52 gallons of ink per hour 2.20 gallons of coating per hour	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
107	-	Ink-Jet Digital Printing Press with coating unit – Model 6034988 (2010)	526,620 pages per hour 2.52 gallons of ink per hour 2.20 gallons of coating per hour	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
108	-	Ink-Jet Digital Printing Press with coating unit – Model 6038475	52,346 documents per hour 4.05 gallons of ink per hour	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
109	-	Ink-Jet Digital Printing Press with coating unit – Model 6038475	52,346 documents per hour 4.05 gallons of ink per hour	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
<b>Paper and Dust Handling Systems</b>							
PTS-1	C1, C2, C3, C4	Pneumatic trim scrap system (C1 – C3, 1980; C4, 2001)	15 tons/hr	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
PTS-2	C5	Pneumatic trim scrap system (C5, 2010)	15 tons/hr	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
WPD	BH1 BH2	Waste paper dust collection system (BH1, 1980; BH2, 2001)	15 tons/hr	Baghouse	BH	TSP, PM-10	1/5/12 as amended 8/5/14 and 3/26/15

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
<b>Adhesive Operations</b>							
ADH	-	Binding line adhesive application (1980)	-	none	-	-	1/5/12 as amended 8/5/14 and 3/26/15
<b>Emergency Generators</b>							
EG-1	-	Waukesha 120 kW emergency generator with spark ignition engine	175 hp	none	-	-	RICE MACT (4Z)
EG-2	-	Onan 80 kW emergency generator with spark ignition engine	144 hp	none	-	-	RICE MACT (4Z)
FP	-	Cummins Model NT-495-FP compression ignition fire pump	170 hp	none	-	-	RICE MACT (4Z)
<b>Boilers</b>							
SB1	-	Fulton Steam Boiler Model FB-050-A Natural Gas / Propane	2.2 MMBtu/hr	none	-	-	Boiler MACT (5D)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
SB2	-	Fulton Steam Boiler Model FP-030-A Natural Gas / Propane	2.2 MMBtu/hr	none	-	-	Boiler MACT (5D)
HWB 1	-	Dunham Bush Boiler Iron Fireman Model 502A-W-200 Natural Gas / Propane	6.7 MMBtu/hr	none	-	-	Boiler MACT (5D)
HWB 2	-	Dunham Bush Boiler Iron Fireman Model 502A-W-200 Natural Gas / Propane	6.7 MMBtu/hr	none	-	-	Boiler MACT (5D)

\*The Size/Rated capacity is provided for informational purposes only and is not an applicable requirement.

**EMISSIONS INVENTORY**

A copy of the 2015 annual emission update is attached as Attachment A. Emissions are summarized in the following tables.

*Table 2: 2015 Actual Emissions*

Emission Unit	Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>
Sheetfed press (751)	1.32	0	0	0	0
Heatset web presses (765-766, 770-773, 782-787, 790, and 791)	50.99	0	0	0	0
Ink-Jet digital presses (105-109)	6.13	0	0	0	0
Paper and dust handling systems (PTS-1, PTS-2, and WPD)	0	0	0	12.9	0
Adhesive operations (ADH)	3.22	0	0	0	0
Space heat boilers	0.03	0.44	0.003	0.04	0.523
<b>Total</b>	<b>61.69</b>	<b>0.44</b>	<b>0.003</b>	<b>12.94</b>	<b>0.53</b>

*Table 3: 2015 Facility Hazardous Air Pollutant Emissions*

Pollutant	Hazardous Air Pollutant Emissions in Tons/Year
<b>TOTAL HAPS</b>	<b>0.0</b>

Note: Combustion emissions of naphthalene, arsenic, chromium, cobalt, manganese, nickel, and lead were below one pound per year.

## **SHEETFED PRESS APPLICABLE REQUIREMENTS – Unit 751**

### **Limitations**

The following VOC limitations, applicable to the sheetfed (nonheatset) press, are State BACT requirements from the minor NSR permit issued January 5, 2012, as amended August 5, 2014 and March 26, 2015. Condition numbers are from the minor NSR permit; a copy of the permit is attached as Attachment B.

- Condition 9, limiting the VOC composite partial vapor pressure of organic cleaning solvents to 10 mmHg at 68 °F and requiring that organic cleaning solvents, including those retained in used towels, be stored in a closed container when not in use
- Condition 17, limiting throughput of VOC in inks and fountain solutions to 17.1 tons per year and throughput of VOC in cleaning solvents to 7.9 tons/yr, each calculated monthly as the sum of the previous consecutive 12-month period
- Condition 22, limiting VOC emissions from the sheetfed press to 21.0 tons/yr, calculated monthly as the sum of the previous consecutive 12-month period
- Condition 27, limiting visible emissions to five percent opacity

### **Monitoring and Recordkeeping**

The monitoring and recordkeeping requirements in Condition 30 of the minor NSR permit have been modified to meet Part 70 requirements. The permittee is required to monitor and record on a monthly basis the throughput of VOC (in inks, fountain solutions, and cleaning solvents) to the sheetfed press. The permit also requires that monthly and annual VOC emissions from the sheetfed press be calculated each month to demonstrate compliance with VOC emissions limits. Safety Data Sheets (SDS) for all materials used are required to be maintained on site. The following assumptions, from EPA's draft Control Techniques Guidelines (CTG) for Control of VOC from Offset Lithographic Printing (EPA-453/D-95-001, September 1993) shall be used in calculating VOC emissions:

- 95 percent of nonheatset ink VOC is retained in paper substrate (five percent emitted)
- 100 percent of fountain solution VOC is emitted
- 50 percent of cleaning solvent applied is emitted (50 percent retained in used towels kept in closed containers)

Considering that the sheetfed press is operated at ambient temperature and that the inks employed are of low VOC content (primarily ultraviolet-cured inks are used), operation of the sheetfed press is not expected to result in visible emissions. Accordingly, no monitoring has been included in the permit for the visible emissions limit on the sheetfed press.

The permit includes requirements to maintain records of all monitoring and testing required by the permit. Such records include VOC emission calculations and supporting VOC throughput and material formulation records. Condition 5 of the Title V permit requires that calculation of VOC emissions be made using the following formula:

$$E_{VOC} = \sum_{i=1}^n [(I_{VOC,i} \times 0.05) + FS_{VOC,i} + (BW_{VOC,i} \times 0.50)]$$

Where:

- $E_{VOC}$  = VOC emissions in tons per month
- $I_{VOC}$  = Monthly throughput of VOC contained in ink, as applied (tons)
- $FS_{VOC}$  = Monthly throughput of VOC contained in fountain solution (tons)
- $BW_{VOC}$  = Monthly throughput of VOC contained in blanket wash or cleaning solvent (tons)
- $i$  = Each ink, fountain solution, or blanket wash

For the purposes of calculating VOC emissions, the permit requires a tiered approach to determining VOC content in coating. Under certain circumstances, the permit allows the VOC content of coating as supplied used in emission calculations to be based on manufacturer formulation data as shown on the SDS for each product. If a range of VOC content values is given, calculations shall be based on the maximum value. However, once the monthly calculation of actual emissions indicates that annual VOC emissions from any individual ink, fountain solution, coating, or other material are equal to or greater than 10% of the allowable annual emissions, quarterly testing of that product formulation is required. The testing shall be conducted, by either the permittee or the supplier, using EPA Reference Method 24 (40 CFR 60, Appendix A). Each shipment of subject material must be identified by a product formulation number that may be correlated to Reference Method 24 results. Emission calculations must be based on the most recent test results for each formulation. The quarterly tests may be discontinued after actual annual emissions from individual subject inks, fountain solutions, coatings, or other materials, are below 10 percent of the allowable levels for three consecutive months. If quarterly testing is discontinued, the permit requires that the VOC content determined in the latest test for each subject formulation be used in lieu of SDS information.

Please note that RRD's Harrisonburg plant prints books using primarily one of two black inks. The two inks account for over 85 percent of the ink volume used at the facility. There are many individual colored inks used to fulfill various applications; most are used in very small amounts as needed for illustration or highlighting purposes and represent only a small fraction of the total ink used. Testing inks used in such small quantities (often less than 100 gallons a year) would be costly and would not be representative of the inks comprising the majority of the emissions. The tiered approach proposed, therefore, will ensure that VOC content is verified for those inks that appreciably contribute to emissions and will thus provide a reasonable assurance of compliance with the emission limit.

### **Compliance Assurance Monitoring (CAM)**

Press 751 does have add-on control equipment. Therefore, CAM is not applicable.

### **Testing**

The permit does not require source tests. The permit requires the facility to be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

### **Reporting**

There are no specific reporting requirements related to the sheetfed press.

### **WEB PRESS APPLICABLE REQUIREMENTS – Units 765-766, 770-773, 782-787, 790, and 791**

#### **Limitations**

The following VOC limitations, applicable to the web (heatset) presses, are State BACT requirements from the minor NSR permit issued January 5, 2012, as amended August 5, 2014 and March 26, 2015. Condition numbers are from the minor NSR permit; a copy of the permit is attached as Attachment B.

- Condition 2, requiring that VOC emissions be controlled by using a fountain solution containing alcohol substitutes and limiting the VOC content of the fountain solution to no more than a daily average of five percent by weight
- Condition 3, limiting VOC content of inks used on Presses 765-773, 782, 784-785, 787, 790, and 791 to 32 percent by weight, calculated as a monthly average
- Condition 4, limiting VOC content of inks used on Presses 783 and 786 to 28% by weight, as applied
- Condition 8, requires VOC emissions from Presses 770 and 772 to be controlled by the RTO
- Condition 9, limiting the VOC composite partial vapor pressure of organic cleaning solvents to 10 mmHg at 68 °F and requiring that organic cleaning solvents, including those retained in used towels, be stored in a closed container when not in use

- Condition 15, limiting fuels used in the heatset press dryers (Presses 765-766, 770-773, 782-787, 790, and 791) to natural gas and propane
- Condition 17, limiting the annual throughput of VOC in inks, fountain solutions, blanket washes and cleaning solvents used the heatset presses (some presses limited individually and some in groupings)
- Condition 23, limiting annual VOC emissions from the heatset presses (some presses limited individually and some in groupings)
- Condition 27, limiting visible emissions from heatset presses to ten percent opacity for uncontrolled presses and to five percent opacity for Presses 770 and 772.

### **Monitoring and Recordkeeping**

The permit requires RRD to inspect each web press stack weekly for visible emissions. If any visible emissions are present, a six-minute visible emissions evaluation (VEE) must be conducted according to EPA Reference Method 9 (40 CFR 60, Appendix A). If during the six minutes any violations of the opacity standard are noted, a one-hour VEE is required to demonstrate compliance with the standard. Timely corrective action is required if a violation is determined to have occurred. Such requirements provide a reasonable assurance of compliance with the visible emissions limit. Please note that based on past inspection reports, it is unlikely that the visible emissions limit will be violated.

The monitoring and recordkeeping requirements in Condition 30 of the minor NSR permit have been modified to meet Part 70 requirements. The permittee is required to monitor and record on a monthly basis the throughput of VOC (in inks, fountain solutions, and cleaning solvents) to the heatset presses and the monthly average or as applied VOC contents of the inks, as applicable. The permit also requires that monthly and annual VOC emissions from the heatset presses be calculated each month to demonstrate compliance with VOC emissions limits. Safety Data Sheets (SDS) for all materials used are required to be maintained on site. Presses 770 and 772 are controlled by the RTO. All remaining presses are uncontrolled. The RTO is required to maintain a destruction efficiency of 95.0 percent and a minimum combustion zone temperature. The combustion zone temperature is determined using data-logging probes; therefore the requirement from Condition 12 of the NSR permit, calling for details regarding the method of calculation has been omitted from the Title V condition since it has already been fulfilled.

The following assumptions, from EPA's Control Techniques Guidelines (CTG) for Offset Lithographic Printing and Letterpress Printing (EPA-453/R-06-002, September 2006) shall be used in calculating VOC emissions for uncontrolled presses:

- 20 percent of ink VOC is retained in paper substrate (80 percent emitted)
- 100 percent of fountain solution VOC is emitted

- 50 percent of cleaning solvent applied is emitted (50 percent retained in used towels kept in closed containers)

The following additional assumptions shall be used in calculating VOC emissions for controlled presses:

- destruction efficiency of the RTO for ink VOC
- 30 percent of fountain solution VOC is emitted and 70 percent is controlled per the destruction efficiency of the RTO

The permit includes requirements to maintain records of all monitoring and testing required by the permit, derived from Condition 29 of the minor NSR permit. Such records include VOC emission calculations and supporting VOC throughput and material formulation records. Condition 25 of the Title V permit requires that the monthly calculation of VOC emissions for the following presses be made using the following formula: Presses 783 and 786 (each individually), and Presses 765-766, 770-773, 782, 784-785, 787, 790, and 791 (combined).

$$E_{VOC} = \sum_{i=1}^n \left[ \begin{array}{l} 0.80I_{uVOC,i} + 0.80I_{cVOC,i} \left( 1 - \frac{\varepsilon}{100} \right) \\ + FS_{uVOC,i} + \left( 0.30 + 0.70 \left( 1 - \frac{\varepsilon}{100} \right) \right) FS_{cVOC,i} \\ + 0.50CS_{mVOC,i} + CS_{aVOC,i} \end{array} \right]$$

Where

- $E_{VOC}$  = VOC emissions in tons per month
- $I_{uVOC}$  = Monthly throughput of VOC contained in ink, as applied (tons) in uncontrolled presses
- $I_{cVOC}$  = Monthly throughput of VOC contained in ink, as applied (tons) in controlled presses
- $\varepsilon$  = RTO destruction efficiency (percent) as determined in testing of RTO
- $FS_{uVOC}$  = Monthly throughput of VOC contained in fountain solution (tons) in uncontrolled presses
- $FS_{cVOC}$  = Monthly throughput of VOC contained in fountain solution (tons) in controlled presses
- $CS_{mVOC}$  = Monthly throughput of VOC contained in manual blanket wash/cleaning solvent (tons)
- $CS_{aVOC}$  = Monthly throughput of VOC contained in automatic blanket wash/cleaning solvent (tons)
- $i$  = Each ink, fountain solution, or cleaning solvent used

Please note that this formula has been updated over the years to reflect the changes at the facility.

For the purposes of calculating VOC emissions, the permit requires a tiered approach to determining VOC content in coating. Under certain circumstances, the permit allows the VOC content of coating as supplied used in emission calculations to be based on manufacturer formulation data as shown on the SDS for each product. If a range of VOC content values is given, calculations shall be based on the maximum value. However, once the monthly calculation of actual emissions indicates that annual VOC emissions from any individual ink, fountain solution, coating, or other material are equal to or greater than 10 percent of the allowable annual emissions, quarterly testing of that product formulation is required. The testing shall be conducted, by either the permittee or the supplier, using EPA Reference Method 24 (40 CFR 60, Appendix A). Each shipment of subject material must be identified by a product formulation number that may be correlated to Reference Method 24 results. Emission calculations must be based on the most recent test results for each formulation. The quarterly tests may be discontinued after actual annual emissions from individual subject inks, fountain solutions, coatings, or other materials, are below 10 percent of the allowable levels for three consecutive months. If quarterly testing is discontinued, the permit requires that the VOC content determined in the latest test for each subject formulation be used in lieu of SDS information.

Please note that RRD's Harrisonburg plant prints books using primarily one of two black inks. The two inks account for over 85 percent of the ink volume used at the facility. There are many individual colored inks used to fulfill various applications; most are used in very small amounts as needed for illustration or highlighting purposes and represent only a small fraction of the total ink used. Testing inks used in such small quantities (often less than 100 gallons a year) would be costly and would not be representative of the inks comprising the majority of the emissions. The tiered approach proposed, therefore, will ensure that VOC content is verified for those inks that appreciably contribute to emissions and will thus provide a reasonable assurance of compliance with the emission limit.

### **Compliance Assurance Monitoring (CAM)**

The potential pre-control device emissions from Presses 770 and 772 (the two presses that will be controlled by the RTO) (combined) are as follows: 29.14 tpy VOCs and 4.92 tpy HAPs. Since the pre-control VOC emissions are below 100 tpy, individual HAP emissions are less than 10 tpy, and total HAP emissions are less than 25 tpy, CAM is not applicable to Presses 770 and 772. Since none of the remaining web (heatset) presses have add-on control equipment, CAM is also not applicable to Presses 765-766, 771, 773, 782-787, 790, and 791.

### **Testing**

Condition 32 of the Title V permit requires performance testing for the RTO serving Presses 770 and 772 at least once during the five year term of the permit. This testing is required to demonstrate the destruction efficiency of the RTO at 95.0 percent or greater. The initial

performance tests were completed on November 13, 2007. The requirements in Conditions 28 and 29 of the minor NSR permit that RRD conduct additional performance tests for VOC from the RTO and additional VEE on the heatset presses, respectively, upon the request of DEQ has been included in the Title V permit. A condition requiring that the appropriate test methods be used if additional testing is performed has been included in the permit. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

### **Reporting**

There are no specific reporting requirements related to the heatset presses.

## **INK-JET DIGITAL PRESS APPLICABLE REQUIREMENTS – Units 105-109**

### **Limitations**

The following VOC limitations, applicable to the ink-jet digital presses, are State BACT requirements from the minor NSR permit issued January 5, 2012, as amended August 5, 2014 and March 26, 2015. Condition numbers are from the minor NSR permit; a copy of the permit is attached as Attachment B.

- Condition 5, limiting VOC content of inks used on Presses 105-107 to no more than 0.833 lb/gal, by weight
- Condition 6, limiting VOC content of inks used on Presses 108 and 109 to no more than 0.866 lb/gal, by weight
- Condition 7, limiting VOC content of coatings used on Presses 105-107 to no more than 0.30 lb/gal, by weight
- Condition 9, limiting the VOC composite partial vapor pressure of organic cleaning solvents to 10 mmHg at 68 °F and requiring that organic cleaning solvents, including those retained in used towels, be stored in a closed container when not in use
- Condition 21, limiting VOC throughput to the three Presses (105-107) to 38.2 tons per year or less, calculated monthly as the sum of each consecutive 12-month period
- Condition 22, limiting VOC throughput to the two Presses (108 and 109) to 30.7 tons per year or less, calculated monthly as the sum of each consecutive 12-month period
- Condition 24, limiting VOC emissions from the ink-jet digital presses (105-107) to 8.72 lbs/hr and 38.2 tons/year, respectively, with annual emissions calculated monthly as the sum of the previous consecutive 12-month period

- Condition 25, limiting VOC emissions from the ink-jet digital presses (108 and 109) to 7.02 lbs/hr and 30.7 tons/year, respectively, with annual emissions calculated monthly as the sum of the previous consecutive 12-month period
- Condition 27, limiting visible emissions from ink-jet digital presses (105-109) to ten percent opacity

### **Monitoring and Recordkeeping**

The monitoring and recordkeeping requirements in Condition 30 of the minor NSR permit have been modified to meet Part 70 requirements. The permittee is required to monitor and record on a monthly basis the throughput of VOC (in inks and coatings) to the ink-jet digital presses. The permit also requires that monthly and annual VOC emissions from the ink-jet digital presses be calculated each month to demonstrate compliance with VOC emissions limits. Safety Data Sheets (SDS) for all materials used are required to be maintained on site.

The permit includes requirements to maintain records of all monitoring and testing required by the permit, derived from Condition 30 of the minor NSR permit. Such records include VOC emission calculations and supporting VOC throughput and material formulation records. For the purposes of calculating VOC emissions, it is assumed that 100 percent of the VOCs are emitted from the ink-jet digital presses with coating units.

### **Compliance Assurance Monitoring (CAM)**

None of the ink-jet digital presses (105-109) has add-on control equipment and is therefore not subject to CAM.

### **Testing**

The permit does not require source tests. The requirements in Condition 29 of the minor NSR permit that RRD conduct additional VEE on the ink-jet digital presses upon the request of DEQ has been included in the Title V permit. A condition requiring that the appropriate test methods be used if additional testing is performed has been included in the permit. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

### **Reporting**

There are no specific reporting requirements related to the ink-jet digital presses (105-109).

**PAPER AND DUST HANDLING SYSTEMS APPLICABLE REQUIREMENTS –  
Pneumatic Trim Scrap (PTS-1 and PTS-2) systems and Waste Paper Dust (WPD) system**

**Limitations**

The following particulate matter (PM) limitations, applicable to the scrap and dust handling systems, are State BACT requirements from the minor NSR permit issued January 5, 2012, as amended August 5, 2014 and March 26, 2015. Condition numbers are from the minor NSR permit; a copy of the permit is attached as Attachment B.

- Condition 10, requiring that PM from the WPD system be controlled by fabric filter
- Condition 19, limiting paper throughput to the PTS-1 to 38,600 tons/yr
- Condition 20, limiting paper throughput to the PTS-2 to 87,600 tons/yr
- Condition 26, limiting hourly and annual emissions from PTS-1 operations to 15 lbs/hr and 19.3 tons/yr, respectively, limiting short-term and annual emissions from PTS-2 operations to 0.05 gr/dscf and 9.0 tons/yr, respectively, and limiting emissions from binding line roughing operations (WPD system) to 0.01 gr/dscf and 2.6 tons/yr
- Condition 27, limiting visible emissions from PTS-1 operations to 20 percent opacity, those from PTS-2 operations to 10 percent opacity, and those from the WPD system to five percent opacity

**Monitoring and Recordkeeping**

*PTS-1 and PTS-2*

The monitoring and recordkeeping requirements in Condition 30 of the minor NSR permit have been modified to meet Part 70 requirements. The permittee is required to perform weekly inspections of the stacks of the cyclones of the PTS-1 and the PTS-2 to assess the presence of visible emissions. If visible emissions are seen from the cyclones of the PTS-1 or PTS-2, the permit requires that an EPA Reference Method 9 test be performed. If the test indicates a violation, corrective action shall be taken.

The permit requires that RRD show compliance with the annual PTS-1 throughput limit by monitoring and recording the weight of paper trim scraps captured in the cyclones. Based on testing at another RRD facility having similar printing and binding operations, RRD derived an emission factor correlating PM emissions to the amount of paper scraps recovered in the cyclones of the PTS-1 (one pound PM per ton paper scraps baled). Subsequently, Reference Method 5 testing of a similar unit indicated that the derived emission factor is conservative. The emission factor, along with records of paper scraps captured, will be used to calculate PM emissions from the cyclones of the PTS-1. Because the emission factor is one, the formula for

calculating monthly PM emissions ( $E_{PM}$ ) provided in the permit is simply the tons of paper scrap (S) divided by 2000, or

$$E_{PM} = \frac{S}{2000}$$

The throughput limit was derived based on allowable emissions and the emission factor provided by RRD and confirmed by test results. Therefore, compliance with the throughput limit assures compliance with the emission limit.

The permit requires RRD to keep monthly records of the annual throughput (tons) of paper shavings baled. RRD is also required to keep weekly records of the VE inspections performed on the PTS-1 cyclone stacks.

The permit requires that RRD show compliance with the annual PTS-2 throughput limit by monitoring and recording the hours of operation of the PTS-2. Based on manufacturer's specifications, RRD derived a conservative emission factor correlating PM emissions to the hours of operation of the cyclone (2.0 pounds PM per hour of PTS-2 operation). The emission factor, along with records of hours of operation, will be used to calculate PM emissions from the cyclone of the PTS-2. The formula to calculate PM emissions from PTS-2 is:

$$E_{PM} = \frac{(H)(EF)}{2000}$$

The throughput limit was derived based on allowable emissions and the emission factor provided by RRD. Therefore, compliance with the throughput limit assures compliance with the emission limit.

The permit requires RRD to keep monthly records of the annual throughput (tons) of paper shavings baled. RRD is also required to keep weekly records of the VE inspections performed on the PTS-2 cyclone stack.

### WPD

The monitoring requirements in Condition 14 of the minor NSR permit require that each fabric filter be equipped with devices to continuously measure the differential pressure drop across the filter. In addition, the Title V permit requires RRD to maintain records of weekly inspections, the pressure drop across the fabric filters, and the annual fabric filter inspection results.

### **Compliance Assurance Monitoring (CAM)**

#### PTS-1 and PTS-2

The cyclones on the PTS-1 and PTS-2 systems are considered inherent and not add-on control equipment. Therefore, CAM is not applicable.

### WPD

Each baghouse serving the WPD system has potential pre-control PM emissions above 100 tons/yr. The baghouses are used to meet the PM standard established in the minor NSR permit for the WPD system. Accordingly, each baghouse is subject to Compliance Assurance Monitoring (CAM) at 40 CFR 64.

RRD submitted a CAM Plan as part of the permit application, proposing the following as indicators of compliance for each baghouse:

1. Differential pressure across the baghouse between 1.5 and 6.0 inches water column
2. The absence of visible emissions from the baghouse exhaust stack
3. Annual internal inspections to confirm structural integrity of the baghouse

The plan includes the rationale for indicator selection and range (differential pressure) and is included as Attachment C. The CAM Plan is derived from the periodic monitoring that was required for the baghouses in the initial Title V permit; it enhances the original monitoring by specifying the acceptable differential pressure range. Additionally, VRO staff added an option to conduct a Method 9 visible emissions evaluation if visible emissions are detected and specific recordkeeping requirements as part of the CAM Plan.

#### *Rationale for Selection of Performance Indicators*

The first indicator, differential pressure across the baghouse, is appropriate because baghouses are designed to operate at a relatively constant pressure drop. Monitoring pressure drop provides a means of detecting a change in operation that could lead to an increase in emissions. An increase in pressure drop can indicate that the cleaning cycle is not frequent enough, cleaning equipment is damaged, the bags are becoming inefficient, or the airflow has increased. A decrease in pressure drop may indicate broken or loose bags (but this is also indicated by the presence of visible emissions, indicator No. 2). A pressure drop across the baghouse also serves to indicate that there is airflow through the control device.

Visible emissions were selected as a performance indicator because it is indicative of good operation and maintenance of the baghouse. When the baghouse is operating properly, there will not be any visible emissions from the exhaust. Any increase in visible emissions indicates reduced performance of a particulate control device, therefore, the presence of visible emissions is used as a performance indicator.

#### *Rationale for Selection of Indicator Ranges*

The indicator range chosen for the baghouse pressure drop is between 0.5 and 4.5 ( $2.5 \pm 2.0$ ) in. H<sub>2</sub>O. An excursion triggers an inspection, corrective action, and a reporting requirement.

The pressure drop is recorded weekly. This indicator is also used to monitor for bypass of the control device. A pressure drop below 0.5 inches H<sub>2</sub>O may indicate bypass or bag rupture. A pressure drop above the indicator range means that bag(s) need replacement or that the bag cleaning function is not working properly. Condition 62 requires investigation and correction of control device operation upon the detection of an excursion or exceedance. The QIP threshold for this indicator is no more than three excursions outside of the indicator range in any semi-annual reporting period.

The selected range for the second indicator is an average opacity greater than five percent during one six-minute period in any one hour. Certified Method 9 observer shall perform Method 9 VEE. Observations shall be taken at least once per week at each baghouse exhaust. The plan requires that the weekly observation initially be conducted to determine the presence or absence of visible emissions and the results recorded. If visible emissions are observed, a Method 9 VEE in accordance with 40 CFR 60, Appendix A may be conducted optionally to determine if an excursion occurs (results shall be recorded upon completion of each Method 9). If visible emissions are observed and a Method 9 VEE is not conducted, then an excursion is considered to have occurred. When an excursion occurs, corrective action will be initiated, beginning with an evaluation of the occurrence to determine the action required to correct the situation. All excursions will be documented and reported. An indicator range of five percent opacity was selected because: the WPD system is subject to a five percent opacity limit. The selected QIP threshold for baghouse visible emissions is no more than three excursions outside of the indicator range in any semi-annual reporting period. If the QIP threshold is exceeded in a semiannual reporting period, a QIP will be developed and implemented.

The approved CAM Plan, including indicators to be monitored, indicator measurement methods, and performance criteria in 40 CFR 64.3, were incorporated by reference into the previous Title V renewal permit. The Plan also defines what constitutes an excursion for each indicator and the threshold above which the number of excursions would require a Quality Improvement Plan (QIP). The permit also requires that records be kept of the monitoring required by the Plan and requires that reports of excursions, monitor downtime incidents and actions taken to implement a QIP be submitted semi-annually. The permit includes a condition stating RRD's obligation to conduct monitoring specified in the permit's CAM attachment. The differential pressure monitoring, visible emissions checks, and annual inspection requirements included in the permit's CAM plan will provide an assurance of compliance with applicable requirements for each WPD baghouse and therefore satisfy the requirements of 40 CFR 64. The CAM conditions were updated per current DEQ boilerplate.

## **Testing**

The permit does not require source tests. A condition requiring that the appropriate test methods be used if additional testing is performed has been included in the permit. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

## Reporting

There are no specific reporting requirements related to the paper and dust handling systems.

## ADHESIVE OPERATIONS APPLICABLE REQUIREMENTS – Unit ADH

### Limitations

The following VOC limitations, applicable to adhesive operations, are State BACT requirements from the minor NSR permit issued January 5, 2012, as amended August 5, 2014, and March 26, 2015. Condition numbers are from the minor NSR permit; a copy of the permit is attached as Attachment B.

- Condition 9, limiting the VOC composite partial vapor pressure of organic cleaning solvents to 10 mmHg at 20 °C and requiring that organic cleaning solvents, including those retained in used towels, be stored in a closed container when not in use
- Condition 17, limiting VOC throughput to 12.5 tons/yr
- Condition 23, limiting VOC emissions to 12.5 tons/yr
- Condition 27, limiting visible emissions to five percent opacity

### Monitoring and Recordkeeping

The monitoring and recordkeeping requirements in Condition 30 of the minor NSR permit have been modified to meet Part 70 requirements. The permittee is required to monitor and record on a monthly basis the throughput of VOC in adhesives applied on the binding lines and calculate monthly and annual VOC emissions to demonstrate compliance with VOC limits. Safety Data Sheets (SDS) for all adhesives used are required to be maintained on site. In calculating VOC emissions, it is assumed that all VOC applied is eventually emitted to the atmosphere. The VOC content of adhesives, as supplied, shall be that indicated on the SDS for each product.

Emissions from adhesive operations are required to be calculated monthly as follows:

$$E_{VOC} = \sum_{i=1}^n ADH_{VOC,i} + CS_{VOC,i}$$

Where

$E_{VOC}$  = VOC emissions in tons per month

$ADH_{VOC}$  = Monthly throughput of VOC contained in adhesives, as applied (tons)

$CS_{VOC}$  = Monthly throughput of VOC contained in cleaning solvent (tons)

i = Each stain or solvent used

The recordkeeping requirements in Condition 30 of the Minor NSR Permit have been modified to meet Part 70 requirements. Required records include amount of VOC used and emitted in adhesive operations, including those in the adhesives themselves and those in cleaning solvents. Certified SDS showing VOC content of each adhesive used must also be maintained.

### **Compliance Assurance Monitoring (CAM)**

The emissions from the adhesive operations are less than 100 tpy and there is no add-on control equipment. Therefore, the adhesive operations are not subject to CAM.

### **Testing**

There are no source test requirements for the process. A condition requiring that the appropriate test methods be used if additional testing is performed has been included in the permit. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

## **FACILITY WIDE REQUIREMENTS – Units EG-1, EG-2, and FP**

### **Limitations**

The following limitations, applicable to the natural gas engines for the emergency generators (EG-1 and EG-2) and the diesel-fired engine for the fire pump (FP), are requirements from 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)); condition numbers refer to the Title V permit:

- Condition 83, requiring maintenance requirements for the natural gas-fired engines for the emergency generators (EG-1 and EG-2) including oil and filter changes every 500 hours of operation or annually, spark plugs inspection every 1,000 hours of operation or annually, and hoses and belts inspection every 500 hours of operation or annually
- Condition 84, requiring maintenance requirements for the diesel-fired engine for the fire pump (FP) including oil and filter changes every 500 hours of operation or annually, air cleaner inspection every 1,000 hours of operation or annually, and hoses and belts inspection every 500 hours of operation or annually
- Condition 85, requires the permittee to minimize the engine's time spent at idle and to minimize the engine's startup time at startup

- Condition 86, requires the development of a maintenance plan for the natural gas-fired engines for the emergency generators (EG-1 and EG-2) and the diesel-fired engine for the fire pump (FP)
- Condition 87, requires the installation of a non-resettable hour meter on each natural gas-fired and diesel-fired engine if one is not already installed
- Condition 88, establishes the limitations on usage

### **Monitoring and Recordkeeping**

The permittee is required to record the maintenance conducted on the natural gas-fired engine for the emergency generators (EG-1 and EG-2) and the diesel-fired engine for the fire pump (FP) and the hours of operation to demonstrate compliance with the operating limits.

### **Compliance Assurance Monitoring (CAM)**

There is no add-on control equipment for the emergency generators or fire pump and therefore, they are not subject to CAM.

### **Reporting**

RRD is required to report each instance when the maintenance requirements of Conditions 83 and 84 are not met. Each instance must be reported as a deviation in the semiannual monitoring report.

### **Testing**

There are no source test requirements for the process. A condition requiring that the appropriate test methods be used if additional testing is performed has been included in the permit. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

## **FACILITY WIDE REQUIREMENTS – Units Hot Water Boilers 1 and 2 (HWB 1 and HWB 2), and Steam Boilers 1 and 2 (SB1 and SB2)**

### **Limitations**

The following limitations, applicable to the (HWB 1, HWB 2, SB1, and SB2), are requirements from 40 CFR 63, Subpart DDDDD (NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters at Major Sources); condition numbers refer to the Title V permit:

- Condition 92, requires the permittee to operate and maintain the boilers, SB1, SB2, HWB 1, and HWB 2, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.
- Condition 93, requires a biennial tune-up of boilers HWB 1 and HWB 2, and a five-year tune-up of boilers SB1 and SB2. The condition provides the requirements and deadlines for each tune-up.

In addition to the conditions above, initial requirements of 40 CFR 63 Subpart DDDDD include the requirement to conduct an initial tune-up of each boiler (in accordance with §63.7540), and the requirement to perform a one-time energy assessment by a qualified energy assessor (in accordance with §63.7510(e) and Table 3). The facility has completed the initial compliance requirements; they have not been included in the permit.

### **Monitoring and Recordkeeping**

The permittee is required to maintain records of all emission data and operating parameters necessary to demonstrate compliance with 40 CFR 63 Subpart DDDDD. Records include: A copy of each notification and report submitted to comply with Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or compliance report submitted; and, records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in §63.10(b)(2)(viii).

### **Compliance Assurance Monitoring (CAM)**

There is no add-on control equipment for the boilers (HWB 1, HWB 2, SB1, and SB2) and therefore they are not subject to CAM.

### **Reporting**

The permittee is required to report each instance where the applicable work practice standards in Table 3 to Subpart DDDDD were not met. In addition to reporting on work practice standards, the facility is also required to submit biennial or five-year compliance reports to demonstrate continuous compliance with 40 CFR 63 Subpart DDDDD. The permit details the requirements

for the content of each report; all reports must be submitted electronically to the EPA using the Compliance and Emissions Data Reporting Interface (CEDRI).

### **Testing**

There are no source test requirements for the process. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

### **GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

### **Comments on General Conditions**

#### **Conditions 101 through 106: Permit Expiration**

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by   §2.2-604 and  §10.1-1185 of the *Code of Virginia*, and the “Department of Environmental Quality Agency Policy Statement No. 2-2003”.

These general conditions cite the sections that follow:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

9 VAC 5-80-150. Action on Permit Applications

#### **Condition 112: Failure/Malfunction Reporting**

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

In order for emission units to be relieved from the requirement to make a written report in 14 days the emission units must have continuous monitors meeting the requirements of 9 VAC 5-50-410 or 9 VAC 5-40-41.

This general condition cites the sections that follow:

- 9 VAC 5-40-41. Emissions Monitoring Procedures for Existing Sources
- 9 VAC 5-40-50. Notification, Records and Reporting
- 9 VAC 5-50-50. Notification, Records and Reporting

**Condition 116: Permit Modification**

This general condition cites the sections that follow:

- 9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources
- 9 VAC 5-80-190. Changes to Permits.
- 9 VAC 5-80-260. Enforcement.
- 9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources
- 9 VAC 5-80-1605. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas
- 9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas

**Condition 133: Asbestos Requirements**

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains a citation from the Code of Federal Regulations that follow:

- 40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.
- 40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.
- 40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

This general condition cites the regulatory sections that follow:

- 9 VAC 5-60-70. Designated Emissions Standards
- 9 VAC 5-80-110. Permit Content

**FUTURE APPLICABLE REQUIREMENTS**

The facility did not identify any future applicable requirements in the application.

## INAPPLICABLE REQUIREMENTS

The following regulations were identified by the permittee as inapplicable:

9 VAC 5 Chapter 40 Article 31 (Rule 4-31), Emission Standards for Paper and Fabric Coating Application Systems: Rule 4-31 applies only to facilities located in VOC control areas. RRD is not located in a VOC control area. Additionally, RRD conducts printing, not coating, operations.

9 VAC 5 Chapter 40 Article 36 (Rule 4-36), Emission Standards for Flexographic Packaging, Rotogravure and Publication Rotogravure Printing Lines: RRD does not operate flexographic or rotogravure printing presses.

9 VAC 5 Chapter 40, Article 53 (Rule 4-53), Emission Standards for Lithographic Printing Processes: Rule 4-53 applies only to facilities located in designated VOC control areas. RRD is not located in a VOC control area.

40 CFR 63 Subpart KK (National Emission Standards for Hazardous Air Pollutants from the Printing and Publishing Industry): Subpart KK applies to flexographic and rotogravure presses; lithographic printing presses were excluded from the definition of affected source under the rule. Therefore, RRD's Harrisonburg facility is not subject to the standard.

40 CFR 60 Subpart Kb, New Source Performance Standards for Volatile Organic Liquid Storage Vessels: The minimum tank capacity to which 40 CFR 60 Subpart Kb is applicable is 19,812.9 gallons. All storage tanks at the RRD facility have capacities lower than the threshold.

40 CFR 63 Subpart EEEE (National Emission Standards for HAPs from Organic Liquids Distribution): Subpart EEEE has a storage tank applicability threshold of 5,000 gallons. The RRD facility has no tanks that exceed the applicability threshold. Furthermore, transfer operation standards apply to facilities that transfer organic liquids out of the facility; RRD does not transfer solvents out of the facility.

40 CFR 63 Subpart JJJJ (National Emission Standards for Hazardous Air Pollutants from Paper and Other Web Coating): Subpart JJJJ specifically excludes lithographic web coating from the rule at 40 CFR 63.3300(c). Therefore, RRD's Harrisonburg facility is not subject to the standard.

In addition, DEQ identified the following regulation as inapplicable:

40 CFR Part 98 – Mandatory Greenhouse Gas Reporting: The provisions of 40 CFR Part 98 require owners and operators of general stationary fuel combustion sources that emit 25,000

metric tons CO<sub>2e</sub> or more per year in combined emissions from such units, to report greenhouse gas (GHG) emissions, annually. The definition of “applicable requirement” in 40 CFR 70.2 and 71.2 does not include requirements such as those included in Part 98, promulgated under Clean Air Act (CAA) section 114(a)(1) and 208. Therefore, the requirements of 40 CFR Part 98 are not applicable under the Title V permitting program.

As a result of several EPA actions regarding GHG under the CAA, emissions of GHG must be addressed for a Title V permit renewed after January 1, 2011. The current state minor NSR permit for the RRD facility contains no GHG-specific applicable requirements and there have been no modifications at the facility requiring a PSD permit. Therefore, there are no applicable requirements for the facility specific to GHG.

### **INSIGNIFICANT EMISSION UNITS**

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

*Table 4. Insignificant emission units*

<b>Emission Unit No.</b>	<b>Emission Unit Description</b>	<b>Citation</b>	<b>Pollutant(s) Emitted (5-80-720B)</b>	<b>Rated Capacity (5-80-720C)</b>
ADH-TKS	Water-based adhesive tanks	9 VAC 5-80-720B	VOC	-
BAT	Battery chargers	9 VAC 5-80-720B	PM, acid vapors	-
BH	Binder heaters (combustion)	9 VAC 5-80-720C	-	0.1 MMBtu/hr
CHL	Water chillers	9 VAC 5-80-720B	CFC	-
DEV	Plate & film developers	9 VAC 5-80-720B	VOC	-
FLM	Manual film cleaning	9 VAC 5-80-720B	VOC	-
IJP	Ink jet printers	9 VAC 5-80-720B	VOC	-
PV	Propane vaporizer (combustion)	9 VAC 5-80-720C	-	< 10 MMBtu/hr
PW	Parts washers	9 VAC 5-80-720B	VOC	-
PST	Propane storage tanks	9 VAC 5-80-720B	VOC	-
UST	Underground storage tanks	9 VAC 5-80-720B	VOC	-
WH	Water heaters (combustion)	9 VAC 5-80-720C	-	0.8 MMBtu/hr
WST	Waste storage tank	9 VAC 5-80-720C	-	3,000 gallons

<sup>1</sup>The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

## **CONFIDENTIAL INFORMATION**

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

## **PUBLIC PARTICIPATION**

A public notice regarding the draft permit was placed in the Daily News Record, Harrisonburg, Virginia, on July 22, 2016. The 30-day public comment period ran from July 22, 2016 through August 22, 2016.

EPA was sent a copy of the draft permit and notified of the public notice on July 21, 2016. West Virginia, the only affected state, was sent a copy of the public notice in a letter on July 22, 2016.

All persons on the Title V mailing list were sent a copy of the public notice by either electronic mail or in letters on July 22, 2016.

No comments were received.

## **ATTACHMENTS**

Attachment A: 2015 Annual Emissions Report

Attachment B: Minor NSR Permit dated January 5, 2012, as amended August 5, 2015 and March 26, 2015

Attachment C: Compliance Assurance Monitoring (CAM) Plan

Attachment A

2015 Annual Emissions Report



Valley Regional Office  
 4411 Early Road, Harrisonburg, VA22801

Phone #: (540) 574-7800

Registration #: 81000

Report #: 308878

Site Name: R R Donnelley & Sons Co Harrisonburg Mfg North

CMS: Title V Major

Address: 2347 Kratzer Road, Harrisonburg, VA 22802 - 1004

Classification: Major/Potential Major

Contact: Justin Rogers: (540) 564-9548

### AIR INSPECTION REPORT

The purpose of this inspection report is to document DEQ's observations and provide the compliance status for requirements applicable to the facility. Presented below are the following:

- **Inspection Details** describe this inspection report
- **Compliance Summary** lists individual requirements addressed in the report
- **Inspection Summary** provides an overview of the inspector's observations
- **Inspection Checklist** provides additional details and individual observations related to specific requirements

### Inspection Details

Inspection Date: Apr 5, 2016  
 Inspection Reason: Review T5 Emissions Statement  
 Reporting Period: 01/01/2015 - 12/31/2015  
 Inspector: David Taylor  
 Inspection Result: In Compliance

Program Code	Subpart
SIP	
TITLE V	

### Approvals

*David A. Taylor*

*B. Keith Fowler*

Inspector: David Taylor  
 Signed Date: Apr 5, 2016

Supervisor: B. Keith Fowler

**Compliance Summary**

**In Compliance** The applicable requirements listed in the table below were confirmed during the inspection to be in compliance.

Permit Effective Date or Regulation	Applicable Requirement
9/28/2011 TITLEV	XIM

**Inspection Summary**

The data was submitted in a timely manner, certified by the company official, correlated with DEQ/CEDS data, and reflected a compliant status at this time.



VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

2015 EMISSION STATEMENT

RECEIVED  
DEQ - Valley  
APR 01 2016

To: \_\_\_\_\_  
FILE: \_\_\_\_\_

Please correct any errors in the information below (cross out & replace)

FACILITY NAME R R DONNELLEY & SONS CO HARRISONBURG MFG NORTH		REGISTRATION # 81000	
LOCATION ADDRESS 2347 Kratzer Road, Harrisonburg, VA 22802-1004		COUNTY/CITY Rockingham County 165	
MAILING ADDRESS 2347 Kratzer Road, Harrisonburg, VA 22802-1004			
CONTACT PERSON JUSTIN ROGERS	TELEPHONE NUMBER 5405649548	PRIMARY NAICS CODE Books Printing	<i>For Agency Use Only</i>

FACILITY TOTALS (Sum emissions from attached pages)

INVENTORY YEAR 2015	ANNUAL		OZONE SEASON
TOTAL VOC EMISSIONS	55.56	TONS/YR	LBS/DAY
TOTAL NO <sub>x</sub> EMISSIONS	0.52	TONS/YR	LBS/DAY
TOTAL SO <sub>2</sub> EMISSIONS	0.003	TONS/YR	NA
TOTAL PM <sub>10</sub> EMISSIONS	12.94	TONS/YR	NA
TOTAL PB EMISSIONS	0.0	TONS/YR	NA
TOTAL TRS EMISSIONS	NA	TONS/YR	NA
TOTAL TNMOC EMISSIONS (landfills only)	NA	TONS/YR	NA
TOTAL non-VOC/non-PM HAP EMISSIONS	0.0	TONS/YR	NA
TOTAL CO EMISSIONS	0.44	TONS/YR	NA
TOTAL PM <sub>2.5</sub> EMISSIONS	0.04	TONS/YR	NA
TOTAL NH3 EMISSIONS	0.01	TONS/YR	NA

PLEASE ATTACH "ANNUAL UPDATE REPORT" FORM.  
PLEASE ATTACH "EMISSION STATEMENT CERTIFICATION" with appropriate signature.

*(Handwritten signature and date)*  
4/5/16

## DOCUMENT CERTIFICATION

Facility Name: RR Donnelley & Sons Co Harrisonburg MFG North

Registration #: 81000

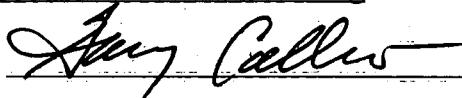
Facility Location: 2347 Kratzer Road, Harrisonburg, Virginia

Type of Submittal Attached: Emission Statement and Annual Update Report

**Certification:** I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official (Print): Gary Calleo

Title: Vice President of Manufacturing

Signature: 

Date: 3/29/16

Permit VRO 81000

RR Donnelley Harrisonburg North Plant  
2015 Total VOC Emissions

From:	Tons
Web Presses	50.99
Sheetfed Press	1.32
Adhesive	3.22
Boiler 1	0.00
Boiler 2	0.03
Total	55.56

2015 Total PM10 Emissions

From:	Tons
PTS-1	11.39
PTS-2	0.94
WPD	0.57
Boiler 1	0.00
Boiler 2	0.04
Total	12.94

2015 Total Gas Usage

From:	Tons
Boiler 1	0.29
Boiler 2	10.24
Total	10.53

## 2015 EMISSION CALCULATIONS OPTION I: EMISSION FACTOR METHOD

REGISTRATION #: 81000

REL. POINT NO.: 1

UNIT NO.: 1

PROCESS NO. 1 SCC NO.:

BOILER 1	ANNUAL	PEAK OZONE SEASON (JUNE, JULY, AUGUST)
THRUPUT (with units)	0.29 mmcf	
NO. OPERATING DAYS	36	
	days	days
NO. OPERATING HOURS PER DAY	24	
	hours	hours
DAILY THRUPUT (with units) = Thruput per day	NA	per day
VOC EMISSION FACTOR (with units) = EF	5.5 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	
Control Efficiency basis <sup>2</sup>	C	
VOC CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. VOC CONTROL EFFICIENCY <sup>4</sup> = CE	0	%
VOC EMISSIONS <sup>5</sup>	0.001	lbs VOC per day
	tons VOC per yr	
NO <sub>x</sub> EMISSION FACTOR (with units) = EF	100 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	
Control Efficiency basis <sup>2</sup>	C	
NO <sub>x</sub> CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. NO <sub>x</sub> CONTROL EFFICIENCY <sup>4</sup> = CE	0	%
NO <sub>x</sub> EMISSIONS <sup>5</sup>	0.01	lbs NO <sub>x</sub> per day
	tons NO <sub>x</sub> per yr	
SO <sub>2</sub> EMISSION FACTOR (with units) = EF	0.6 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	
Control Efficiency basis <sup>2</sup>	C	
FUEL PARAMETER (% ash or % sulfur) = FP	0	%
SO <sub>2</sub> CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. SO <sub>2</sub> CONTROL EFFICIENCY <sup>4</sup> = CE	0	%
SO <sub>2</sub> EMISSIONS <sup>5</sup>	0.0001	lbs SO <sub>2</sub> per day
	tons SO <sub>2</sub> per yr	
PM <sub>10</sub> EMISSION FACTOR (with units) = EF	7.6 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	
Control Efficiency basis <sup>2</sup>	C	
FUEL PARAMETER (% ash or % sulfur) = FP	0	%
PM <sub>10</sub> CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. PM <sub>10</sub> CONTROL EFFICIENCY <sup>4</sup> = CE	0	%
PM <sub>10</sub> EMISSIONS <sup>5</sup>	0.001	lbs PM <sub>10</sub> per day
	tons PM <sub>10</sub> per yr	
PB EMISSION FACTOR (with units) = EF	0.0005 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	
Control Efficiency basis <sup>2</sup>	C	
PB CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. PB CONTROL EFFICIENCY <sup>4</sup> = CE	0	%
PB EMISSIONS <sup>5</sup>	0.0	lbs PB per day
	tons PB per yr	

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material balance; D = Design; O = Other (describe on separate sheet)
3. See 3-digit control device codes listed in appendix.
4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS**  
**OPTION I: EMISSION FACTOR METHOD** (continued)

REGISTRATION #: 81000

REL. POINT NO.: 1

UNIT NO.: 1

PROCESS NO. 1 SCC NO.:

BOILER 1	ANNUAL		PEAK OZONE SEASON (JUNE, JULY, AUGUST)
THRUPUT (with units)	0.29 mmcf		
NO. OPERATING DAYS	36	days	days
NO. OPERATING HOURS PER DAY	24	hours	hours
DAILY THRUPUT (with units) = Thruput per day	NA		per day
TRS Emission Factor (with units) = EF	NA		
Emission Factor source <sup>1</sup>	Control Efficiency basis <sup>2</sup>		
TRS CONTROL DEVICE CODE <sup>3</sup>			
Avg. TRS CONTROL EFFICIENCY <sup>4</sup> = CE			%
TRS EMISSIONS <sup>5</sup>	tons TRS per yr		lbs TRS per day
TNMOC EMISSION FACTOR (with units) = EF	NA		
Emission Factor source <sup>1</sup>	Control Efficiency basis <sup>2</sup>		
TNMOC CONTROL DEVICE CODE <sup>3</sup>			
Avg. TNMOC CONTROL EFFICIENCY <sup>4</sup> = CE			%
TNMOC EMISSIONS <sup>5</sup>	tons TNMOC per yr		lbs TNMOC per day
CO EMISSION FACTOR (with units) = EF	84 lbs/mmcf		
Emission Factor source <sup>1</sup>	Control Efficiency basis <sup>2</sup>	AP42 C	
CO CONTROL DEVICE CODE <sup>3</sup>	0		
Avg. CO CONTROL EFFICIENCY <sup>4</sup> = CE	0		%
CO EMISSIONS <sup>5</sup>	0.01 tons per yr		lbs per day
PM 2.5 EMISSION FACTOR (with units) = EF	7.6 lbs/mmcf		
Emission Factor source <sup>1</sup>	Control Efficiency basis <sup>2</sup>	AP42 C	
FUEL PARAMETER (% ash or % sulfur) = FP	0 %		%
PM 2.5 CONTROL DEVICE CODE <sup>3</sup>	0		
Avg. PM 2.5 CONTROL EFFICIENCY <sup>4</sup> = CE	0		%
PM 2.5 EMISSIONS <sup>5</sup>	0.001 tons per yr		lbs per day
NH3 EMISSION FACTOR (with units) = EF	2.3 lbs/mmcf		
Emission Factor source <sup>1</sup>	Control Efficiency basis <sup>2</sup>	AP42 C	
NH3 CONTROL DEVICE CODE <sup>3</sup>	0		
Avg. NH3 CONTROL EFFICIENCY <sup>4</sup> = CE	0		%
NH3 EMISSIONS <sup>5</sup>	0.0005 tons per yr		lbs per day

1. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)
2. A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)
3. See 3-digit control device codes listed in appendix.
4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").
5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

## 2015 EMISSION CALCULATIONS OPTION I: EMISSION FACTOR METHOD

REGISTRATION #: 81000

REL. POINT NO.: 2

UNIT NO.: 2

PROCESS NO. 1 SCC NO.:

BOILER 2	ANNUAL	PEAK OZONE SEASON (JUNE, JULY, AUGUST)
THRUPUT (with units)	10.24 mmcf	
NO. OPERATING DAYS	182 days	days
NO. OPERATING HOURS PER DAY	24 hours	hours
DAILY THRUPUT (with units) = Thruput per day	NA	per day
VOC EMISSION FACTOR (with units) = EF	5.5 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	C
Control Efficiency basis <sup>2</sup>		
VOC CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. VOC CONTROL EFFICIENCY <sup>4</sup> = CE	0 %	%
VOC EMISSIONS <sup>5</sup>	0.03 tons VOC per yr	lbs VOC per day
NO <sub>x</sub> EMISSION FACTOR (with units) = EF	100 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	C
Control Efficiency basis <sup>2</sup>		
NO <sub>x</sub> CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. NO <sub>x</sub> CONTROL EFFICIENCY <sup>4</sup> = CE	0 %	%
NO <sub>x</sub> EMISSIONS <sup>5</sup>	0.51 tons NO <sub>x</sub> per yr	lbs NO <sub>x</sub> per day
SO <sub>2</sub> EMISSION FACTOR (with units) = EF	0.6 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	C
Control Efficiency basis <sup>2</sup>		
FUEL PARAMETER (% ash or % sulfur) = FP	0 %	%
SO <sub>2</sub> CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. SO <sub>2</sub> CONTROL EFFICIENCY <sup>4</sup> = CE	0 %	%
SO <sub>2</sub> EMISSIONS <sup>5</sup>	0.003 tons SO <sub>2</sub> per yr	lbs SO <sub>2</sub> per day
PM <sub>10</sub> EMISSION FACTOR (with units) = EF	7.6 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	C
Control Efficiency basis <sup>2</sup>		
FUEL PARAMETER (% ash or % sulfur) = FP	0 %	%
PM <sub>10</sub> CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. PM <sub>10</sub> CONTROL EFFICIENCY <sup>4</sup> = CE	0 %	%
PM <sub>10</sub> EMISSIONS <sup>5</sup>	0.04 tons PM <sub>10</sub> per yr	lbs PM <sub>10</sub> per day
PB EMISSION FACTOR (with units) = EF	0.0005 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	C
Control Efficiency basis <sup>2</sup>		
PB CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. PB CONTROL EFFICIENCY <sup>4</sup> = CE	0 %	%
PB EMISSIONS <sup>5</sup>	0.0 tons PB per yr	lbs PB per day

4. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)

5. A = Tested (by EPA Reference Method); B = Tested (other); C = Material balance; D = Design; O = Other (describe on separate sheet)

6. See 3-digit control device codes listed in appendix.

4. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").

5. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100 ; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100

**2015 EMISSION CALCULATIONS**  
**OPTION I: EMISSION FACTOR METHOD (continued)**

REGISTRATION #:81000

REL. POINT NO.: 2

UNIT NO.: 2

PROCESS NO. 1 SCC NO.:

BOILER 2	ANNUAL	PEAK OZONE SEASON (JUNE, JULY, AUGUST)
THRUPUT (with units)	10.24 mmcf	
NO. OPERATING DAYS	182	
	days	days
NO. OPERATING HOURS PER DAY	24	
	hours	hours
DAILY THRUPUT (with units) = Thruput per day	NA	per day
TRS Emission Factor (with units) = EF	NA	
Emission Factor source <sup>1</sup>		
Control Efficiency basis <sup>2</sup>		
TRS CONTROL DEVICE CODE <sup>3</sup>		
Avg. TRS CONTROL EFFICIENCY <sup>4</sup> = CE	%	%
TRS EMISSIONS <sup>5</sup>	tons TRS per yr	lbs TRS per day
TNMOC EMISSION FACTOR (with units) = EF	NA	
Emission Factor source <sup>1</sup>		
Control Efficiency basis <sup>2</sup>		
TNMOC CONTROL DEVICE CODE <sup>3</sup>		
Avg. TNMOC CONTROL EFFICIENCY <sup>4</sup> = CE	%	%
TNMOC EMISSIONS <sup>5</sup>	tons TNMOC per yr	lbs TNMOC per day
CO EMISSION FACTOR (with units) = EF	84 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	
Control Efficiency basis <sup>2</sup>	C	
CO CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. CO CONTROL EFFICIENCY <sup>4</sup> = CE	0	%
CO EMISSIONS <sup>5</sup>	0.43	lbs per day
	tons per yr	
PM 2.5 EMISSION FACTOR (with units) = EF	7.6 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	
Control Efficiency basis <sup>2</sup>		
FUEL PARAMETER (% ash or % sulfur) = FP	0	%
PM 2.5 CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. PM 2.5 CONTROL EFFICIENCY <sup>4</sup> = CE	0	%
PM 2.5 EMISSIONS <sup>5</sup>	0.04	lbs per day
	tons per yr	
NH3 EMISSION FACTOR (with units) = EF	2.3 lbs/mmcf	
Emission Factor source <sup>1</sup>	AP42	
Control Efficiency basis <sup>2</sup>	C	
NH3 CONTROL DEVICE CODE <sup>3</sup>	0	
Avg. NH3 CONTROL EFFICIENCY <sup>4</sup> = CE	0	%
NH3 EMISSIONS <sup>5</sup>	0.01	lbs per day
	tons per yr	

4. AP-42; CEMS; ST = Stack test; F = Federal factor (EPA standard factor); O = Other (describe on separate sheet; use subject to DEQ approval)  
5. A = Tested (by EPA Reference Method); B = Tested (other); C = Material Balance; D = Design; O = Other (describe on separate sheet)  
6. See 3-digit control device codes listed in appendix.  
7. Note control efficiency will be zero if there is no control device OR the emission factor accounts for controls (i.e. EF is identified to be "with controls").  
8. Annual Emissions = ANNUAL THRUPUT x EF x FP x (1/2000) x (100-CE)/100; Ozone Emissions = DAILY THRUPUT x EF x FP x (100-CE)/100



7822 Elettra (F-H)	5	0	0	0	0	0	0	0	0	0	0	0
Nova N-300	0	0	0	0	0	0	0	0	0	0	0	0
Varn Wash V-60 plus	0	0	0	0	0	0	0	0	0	0	0	0
220 Low VOC Wash - autowash	0	0	0	0	0	0	0	0	0	0	0	0
<b>VOC (lbs)</b>	<b>1</b>	<b>0</b>										

MANUAL BLANKET WASH THRUPUT VOC SUMMARY - All Presses												
7137 Auto Solv (f/h)	0	0	0	0	0	0	0	0	0	0	0	0
AutoWash 7000 (Ryco)	0	0	0	0	0	0	0	0	0	0	0	0
Varn Wash V-60 plus	345	0	345	0	0	0	0	0	345	0	0	0
Nova N-300	0	0	0	0	0	0	0	0	0	0	0	0
<b>VOC (lbs)</b>	<b>2,243</b>	<b>0</b>	<b>2,243</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,243</b>	<b>0</b>	<b>0</b>	<b>0</b>

IMPRESSIONS BY PRESS (x 1,000)												
765	6,832	8,013	6,619	5,494	6,938	8,235	7,538	8,269	8,376	8,354	7,741	7,106
766	8,187	8,078	8,413	6,272	810	3,285	8,149	11,637	3,442	7,786	7,796	8,057
767	0	0	0	0	0	0	0	0	0	0	0	0
768	0	0	0	0	0	0	0	0	0	0	0	0
769	0	0	0	0	0	0	0	0	0	0	0	0
770	12,555	10,768	12,318	8,406	4,354	11,620	10,652	11,589	13,436	8,457	3,113	7,844
771	7,597	5,028	9,686	6,257	4,674	3,079	3,429	6,359	7,302	7,742	8,091	6,744
772	10,939	2,856	9,674	6,022	7,297	4,259	0	0	0	0	0	0
773	0	0	0	0	0	0	0	0	0	0	0	0
782	13,698	11,410	14,321	11,882	13,188	13,234	14,833	16,125	16,006	12,534	12,784	12,322
783	12,284	11,150	12,265	10,348	12,080	12,197	2,821	13,837	13,844	12,309	8,994	11,586
784	12,658	13,060	15,858	13,698	13,646	13,195	13,010	15,811	15,585	12,611	12,684	13,651
785	11,593	10,636	12,030	9,767	10,094	10,863	12,838	14,660	14,679	11,635	11,525	11,556
786	0	0	0	0	0	5,614	9,759	13,530	11,953	10,443	8,126	13,284
787	10,735	9,699	12,618	10,307	11,457	11,692	12,874	15,219	14,516	11,377	9,598	12,387
790	9,388	3,053	4,323	3,670	2,178	2,878	4,519	4,939	9,439	4,987	388	3,580
791	9,477	8,957	10,093	9,190	8,425	8,647	9,606	12,003	10,841	6,917	6,423	7,285
<b>Total</b>	<b>125,943</b>	<b>102,708</b>	<b>128,218</b>	<b>101,313</b>	<b>95,141</b>	<b>108,798</b>	<b>110,028</b>	<b>143,978</b>	<b>139,419</b>	<b>115,152</b>	<b>97,263</b>	<b>115,402</b>

ADJUSTED IMPRESSIONS BY PRESS												
765	6,832	8,013	6,619	5,494	6,938	8,235	7,538	8,269	8,376	8,354	7,741	7,106
766	8,187	8,078	8,413	6,272	810	3,285	8,149	11,637	3,442	7,786	7,796	8,057
767	0	0	0	0	0	0	0	0	0	0	0	0
768	0	0	0	0	0	0	0	0	0	0	0	0
769	0	0	0	0	0	0	0	0	0	0	0	0
770	25,110	21,536	24,636	16,812	8,708	23,240	21,304	23,178	26,872	16,914	6,226	15,688
771	7,597	5,028	9,686	6,257	4,674	3,079	3,429	6,359	7,302	7,742	8,091	6,744
772	21,878	5,712	19,348	12,044	14,594	8,518	0	0	0	0	0	0
773	0	0	0	0	0	0	0	0	0	0	0	0
782	12,549	10,453	13,120	10,885	12,082	12,124	13,589	14,773	14,664	11,483	11,712	11,289
783	11,254	10,215	11,236	9,480	11,067	11,174	2,584	12,676	12,683	11,277	8,240	10,614
784	11,596	11,965	14,528	12,549	12,501	12,088	11,919	14,485	14,278	11,553	11,620	12,506



782	2,881	2,853	3,659	2,929	3,470	3,052	3,707	4,124	4,024	3,866	3,228	3,461
783	2,583	2,788	3,134	2,551	3,178	2,812	705	3,539	3,481	3,797	2,271	3,254
784	2,662	3,265	4,052	3,377	3,590	3,043	3,251	4,044	3,918	3,890	3,203	3,834
785	2,438	2,659	3,074	2,408	2,656	2,505	3,208	3,749	3,691	3,589	2,910	3,246
786	0	0	0	0	0	1,294	2,439	3,460	3,005	3,221	2,052	3,731
787	2,258	2,425	3,224	2,541	3,014	2,696	3,217	3,892	3,650	3,509	2,424	3,479
790	4,310	1,666	2,411	1,975	1,251	1,449	2,465	2,758	5,181	3,358	214	2,195
791	4,351	4,889	5,629	4,946	4,839	4,353	5,241	6,702	5,950	4,658	3,541	4,467
<b>TOTAL</b>	<b>37,461</b>	<b>33,744</b>	<b>44,341</b>	<b>33,341</b>	<b>32,258</b>	<b>32,871</b>	<b>35,259</b>	<b>46,071</b>	<b>45,521</b>	<b>43,623</b>	<b>28,072</b>	<b>39,196</b>

**FOUNTAIN SOLUTION THROUGHPUT USAGE (lbs)**

765	365	290	186	198	245	448	177	178	314	229	436	197
766	438	292	237	226	29	179	192	250	129	213	440	224
767	0	0	0	0	0	0	0	0	0	0	0	0
768	0	0	0	0	0	0	0	0	0	0	0	0
769	0	0	0	0	0	0	0	0	0	0	0	0
770	1,342	779	693	607	307	1,265	501	499	1,008	463	351	436
771	406	182	272	226	165	168	81	137	274	212	456	187
772	1,169	207	544	435	515	464	0	0	0	0	0	0
773	0	0	0	0	0	0	0	0	0	0	0	0
782	671	378	369	393	427	660	320	318	550	315	660	313
783	601	369	316	342	391	608	61	273	476	309	465	295
784	620	433	409	453	441	658	281	312	536	317	655	347
785	568	352	310	323	326	542	277	289	504	292	595	294
786	0	0	0	0	0	280	210	267	411	262	420	338
787	526	321	325	341	371	583	278	300	499	286	496	315
790	1,004	221	243	265	154	313	213	212	708	273	44	199
791	1,013	648	568	663	595	941	452	516	813	379	724	405
<b>TOTAL</b>	<b>8,722</b>	<b>4,473</b>	<b>4,473</b>	<b>4,473</b>	<b>3,966</b>	<b>7,110</b>	<b>3,043</b>	<b>3,550</b>	<b>6,223</b>	<b>3,550</b>	<b>5,743</b>	<b>3,550</b>

**BLANKET WASH THROUGHPUT USAGE (lbs)**

765	94	0	93	0	0	0	0	0	113	0	0	0
766	113	0	119	0	0	0	0	0	47	0	0	0
767	0	0	0	0	0	0	0	0	0	0	0	0
768	0	0	0	0	0	0	0	0	0	0	0	0
769	0	0	0	0	0	0	0	0	0	0	0	0
770	345	0	347	0	0	0	0	0	363	0	0	0
771	104	0	137	0	0	0	0	0	99	0	0	0
772	301	0	273	0	0	0	0	0	0	0	0	0
773	0	0	0	0	0	0	0	0	0	0	0	0
782	172	0	185	0	0	0	0	0	198	0	0	0
783	155	0	158	0	0	0	0	0	171	0	0	0
784	159	0	205	0	0	0	0	0	193	0	0	0
785	146	0	155	0	0	0	0	0	182	0	0	0
786	0	0	0	0	0	0	0	0	148	0	0	0
787	135	0	163	0	0	0	0	0	180	0	0	0
790	258	0	122	0	0	0	0	0	255	0	0	0

791	261	0	285	0	0	0	0	0	293	0	0	0
<b>TOTAL</b>	<b>2,244</b>	<b>0</b>	<b>2,243</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,243</b>	<b>0</b>	<b>0</b>	<b>0</b>

**EMISSIONS FROM INK (lbs)**

765	341	475	401	321	433	450	448	501	499	611	464	473
766	409	479	510	367	51	180	484	705	205	570	467	536
767	0	0	0	0	0	0	0	0	0	0	0	0
768	0	0	0	0	0	0	0	0	0	0	0	0
769	0	0	0	0	0	0	0	0	0	0	0	0
770	63	64	75	49	27	64	63	70	80	62	19	52
771	379	298	587	366	291	168	204	385	435	567	485	449
772	55	17	59	35	45	23	0	0	0	0	0	0
773	0	0	0	0	0	0	0	0	0	0	0	0
782	627	620	796	637	753	663	807	895	874	840	701	751
783	562	606	681	555	690	611	153	768	756	825	493	706
784	579	710	881	734	779	661	708	878	851	845	696	832
785	530	578	668	524	577	544	698	814	802	780	632	705
786	0	0	0	0	0	281	531	751	653	700	446	810
787	491	527	701	553	654	586	700	845	793	763	527	755
790	937	362	524	429	272	315	537	599	1,125	730	46	477
791	946	1,063	1,224	1,075	1,051	945	1,141	1,455	1,293	1,012	769	970
<b>TOTAL</b>	<b>5,919</b>	<b>5,801</b>	<b>7,108</b>	<b>5,646</b>	<b>5,623</b>	<b>5,490</b>	<b>6,473</b>	<b>8,665</b>	<b>8,367</b>	<b>8,305</b>	<b>5,744</b>	<b>7,516</b>

**EMISSIONS FROM FOUNTAIN SOLUTION (lbs)**

765	25	45	29	31	40	51	14	14	21	18	28	16
766	30	45	37	35	5	21	15	20	8	17	28	18
767	0	0	0	0	0	0	0	0	0	0	0	0
768	0	0	0	0	0	0	0	0	0	0	0	0
769	0	0	0	0	0	0	0	0	0	0	0	0
770	31	40	36	31	17	49	13	13	22	12	8	12
771	28	28	42	35	27	19	6	11	18	17	29	15
772	27	11	28	22	28	18	0	0	0	0	0	0
773	0	0	0	0	0	0	0	0	0	0	0	0
782	47	58	57	61	70	76	25	25	36	25	43	25
783	42	57	49	53	64	70	5	22	31	24	30	23
784	43	67	63	70	72	76	22	25	35	25	42	27
785	40	54	48	50	54	62	22	23	33	23	38	23
786	0	0	0	0	0	32	17	21	27	21	27	27
787	37	50	50	53	61	67	22	24	33	23	32	25
790	70	34	38	41	25	36	17	17	47	22	3	16
791	71	100	88	102	98	108	36	41	53	30	47	32
<b>TOTAL</b>	<b>491</b>	<b>589</b>	<b>563</b>	<b>583</b>	<b>560</b>	<b>684</b>	<b>214</b>	<b>255</b>	<b>365</b>	<b>257</b>	<b>355</b>	<b>258</b>

**EMISSIONS FROM BLANKET WASH (lbs)**

765	47	0	47	0	0	0	0	0	57	0	0	0
766	56	0	59	0	0	0	0	0	23	0	0	0





<b>PTS-1 Hourly, Monthly, Annual Emissions</b>														
<b>(By-Products Sales Report - Total Bailed Paper excluding bailer paper from Cyclone #5)</b>														
				12-Month	12-Month				12-Month	12-Month				Limit
Year	Month	Thrput lb	Thrput tons	Thrput tons	Thrput Limit tons	EF lb/ton	Emissions Lb	Emissions tons	Emissions tons	Em Limit tons	days*	hours	Emiss lb/hr	Allowed lb/hr
2015	JAN	4,397,688	2,199	26,158	38,600	1.0	2,199	1.10	13.08	19.30	27	648	3.39	15
2015	FEB	3,373,889	1,687	25,494	38,600	1.0	1,687	0.84	12.75	19.30	24	576	2.93	15
2015	MAR	4,357,546	2,179	25,523	38,600	1.0	2,179	1.09	12.76	19.30	29	696	3.13	15
2015	APR	3,353,014	1,677	24,552	38,600	1.0	1,677	0.84	12.28	19.30	25	600	2.79	15
2015	MAY	3,301,254	1,651	24,208	38,600	1.0	1,651	0.83	12.10	19.30	27	648	2.55	15
2015	JUN	3,902,811	1,951	24,349	38,600	1.0	1,951	0.98	12.17	19.30	26	624	3.13	15
2015	JUL	3,700,170	1,850	24,029	38,600	1.0	1,850	0.93	12.01	19.30	29	696	2.66	15
2015	AUG	4,225,097	2,113	23,770	38,600	1.0	2,113	1.06	11.88	19.30	30	720	2.93	15
2015	SEP	4,450,343	2,225	23,403	38,600	1.0	2,225	1.11	11.70	19.30	30	720	3.09	15
2015	OCT	4,114,479	2,057	23,487	38,600	1.0	2,057	1.03	11.74	19.30	27	648	3.17	15
2015	NOV	2,943,124	1,472	23,395	38,600	1.0	1,472	0.74	11.70	19.30	25	600	2.45	15
2015	DEC	3,426,160	1,713	22,773	38,600	1.0	1,713	0.86	11.39	19.30	27	648	2.64	15

4-21-1



WPD Monthly & Annual Emissions (Books Produced - monthly total)										
Year	Month	Books Produced	12-Month Books Produced	Million Books Produced	12-Month Million Produced	EF	Emissions lb	Emissions tons	12-Month Emissions tons	12-Month Emissions Permit Limit
2015	JAN	15,008,161	223,582,856	15.0	223.6	5.6	84.0	0.04	0.63	2.60
2015	FEB	15,194,894	218,470,778	15.2	218.5	5.6	85.1	0.04	0.61	2.60
2015	MAR	21,837,842	216,985,741	21.8	217.0	5.6	122.3	0.06	0.61	2.60
2015	APR	17,393,465	214,923,907	17.4	214.9	5.6	97.4	0.05	0.60	2.60
2015	MAY	15,599,904	211,767,915	15.6	211.8	5.6	87.4	0.04	0.59	2.60
2015	JUN	17,669,491	213,513,698	17.7	213.5	5.6	98.9	0.05	0.60	2.60
2015	JUL	17,210,728	211,794,331	17.2	211.8	5.6	96.4	0.05	0.59	2.60
2015	AUG	20,891,074	209,919,736	20.9	209.9	5.6	117.0	0.06	0.59	2.60
2015	SEP	20,188,837	209,640,407	20.2	209.6	5.6	113.1	0.06	0.59	2.60
2015	OCT	15,066,292	207,139,520	15.1	207.1	5.6	84.4	0.04	0.58	2.60
2015	NOV	13,137,043	207,456,488	13.1	207.5	5.6	73.6	0.04	0.58	2.60
2015	DEC	16,081,599	205,279,330	16.1	205.3	5.6	90.1	0.05	0.57	2.60

102,640 Tons of Finished Product

7-24-1

ADH

ADH THROUGHGHPUT & EMISSIONS (adhesive)						
YEAR	MONTH	VOC LB	12-Month Rolling VOC Total (LB)	VOC Tons	12-Month Rolling VOC Total (Tons)	12-Month VOC Limit (Tons)
2015	JAN	478	6,669.00	0.24	3.33	12.5
2015	FEB	522	6,315.00	0.26	3.16	12.5
2015	MAR	684	6,535.00	0.34	3.27	12.5
2015	APR	559	6,556.00	0.28	3.28	12.5
2015	MAY	628	6,555.00	0.31	3.28	12.5
2015	JUN	483	6,507.00	0.24	3.25	12.5
2015	JUL	495	6,639.00	0.25	3.32	12.5
2015	AUG	611	6,738.00	0.31	3.37	12.5
2015	SEP	680	6,741.00	0.34	3.37	12.5
2015	OCT	452	6,635.00	0.23	3.32	12.5
2015	NOV	312	6,456.00	0.16	3.23	12.5
2015	DEC	536	6,440.00	0.27	3.22	12.5

11-23-1

VOC Summary for Proteus Presses 105-107

Proteus 105-107 combined

Proteus 105-107 Permit Numbers

Year	Month	Ink Usage					Ink Usage					Ink Usage					Ink Usage					Coating Usage					Throughput Usage		Emissions				
		Jet Black Ink					Jet Color Inks (Magenta)					Jet Color Inks (Yellow)					Jet Color Inks Cyan					Nova Coat					TOTAL	TOTAL VOC	TOTAL	TOTAL VOC			
		GAL	0.833 VOC/gal	VOC-lb	12-Month VOC lb	12-Month VOC Tons	GAL	0.833 VOC/gal	VOC-lb	12-Month VOC lb	12-Month VOC Tons	GAL	0.833 VOC/gal	VOC-lb	12-Month VOC lb	12-Month VOC Tons	GAL	0.833 VOC/gal	VOC-lb	12-Month VOC lb	12-Month VOC Tons	GAL	0.3 VOC/gal	VOC-lb	12-Month VOC lb	12-Month VOC Tons	GAL	0.3 VOC/gal	VOC-lb	12-Month VOC lb	12-Month VOC Tons	12-Month VOC Tons	12-Month VOC Limit Tons
2015	JAN	385	0.22	84.7	337.2	1.06	330	0.31	102.3	2970.0	1.49	185	0.31	51.2	3183.8	1.09	220	0.25	55.0	2404.0	1.20	825	0.15	123.8	3456.3	1.73	7.89	38.2	7.92	38.2	7.92	38.2	
2015	FEB	330	0.22	72.8	3201.2	1.05	230	0.31	68.2	2929.3	1.45	275	0.31	85.3	3146.3	1.17	230	0.25	56.0	2402.2	1.20	460	0.15	74.1	3208.8	1.63	7.52	38.2	7.52	38.2	7.52	38.2	
2016	MAR	716	0.22	157.3	3217.5	1.01	395	0.31	122.6	2797.7	1.40	405	0.31	153.6	3053.3	1.01	605	0.25	151.3	2343.0	1.17	1048	0.15	158.8	3203.3	1.65	7.33	38.2	7.33	38.2	7.33	38.2	
2016	APR	185	0.22	38.3	2883.5	1.46	185	0.31	61.2	2413.2	1.21	185	0.31	61.2	2573.5	1.29	275	0.25	68.8	2085.0	1.04	185	0.15	24.8	2740.5	1.37	6.38	38.2	6.38	38.2	6.38	38.2	
2015	MAY	550	0.22	121.0	2781.1	1.38	330	0.31	102.3	2188.8	1.09	440	0.31	135.4	2500.7	1.15	440	0.25	110.0	1898.0	0.95	880	0.15	132.0	2642.0	1.27	8.64	38.2	8.64	38.2	8.64	38.2	
2015	JUN	770	0.22	199.4	2005.0	1.30	550	0.31	170.5	2088.9	1.03	550	0.31	170.5	2182.8	1.08	405	0.25	101.3	1783.9	0.88	0	0.15	0.0	2270.3	1.14	5.44	38.2	5.44	38.2	5.44	38.2	
2015	JUL	880	0.22	192.8	2388.1	1.19	690	0.31	204.6	1993.1	0.99	825	0.31	255.8	2109.9	1.09	715	0.25	178.8	1709.7	0.85	0	0.15	0.0	1791.8	0.90	4.99	38.2	4.99	38.2	4.99	38.2	
2015	AUG	835	0.22	205.7	2285.0	1.13	690	0.31	204.6	1844.5	0.82	860	0.31	204.6	1949.5	0.97	715	0.25	178.8	1628.1	0.81	0	0.15	0.0	1486.5	0.74	4.58	38.2	4.58	38.2	4.58	38.2	
2015	SEP	770	0.22	199.4	1984.4	0.86	690	0.31	204.6	1732.3	0.87	715	0.31	221.7	1728.7	0.88	690	0.25	165.0	1514.2	0.76	0	0.15	0.0	1104.8	0.58	4.06	38.2	4.06	38.2	4.06	38.2	
2015	OCT	770	0.22	199.4	1936.0	0.97	550	0.31	170.5	1770.8	0.89	405	0.31	153.5	1791.9	0.80	405	0.25	123.8	1487.8	0.74	0	0.15	0.0	998.9	0.50	3.90	38.2	3.90	38.2	3.90	38.2	
2015	NOV	480	0.22	96.8	1742.4	0.87	275	0.31	85.3	1644.9	0.82	330	0.31	102.3	1764.0	0.88	275	0.25	68.8	1409.4	0.70	0	0.15	0.0	808.6	0.40	3.88	38.2	3.88	38.2	3.88	38.2	
2015	DEC	385	0.22	84.7	1560.9	0.78	220	0.31	68.2	1554.7	0.78	185	0.31	61.2	1638.8	0.82	275	0.25	68.8	1325.0	0.65	0	0.15	0.0	511.5	0.26	3.29	38.2	3.29	38.2	3.29	38.2	

12-12-1 (INK) = 3.04

12-12-2 (COATING)

VOC Summary for Proteus Presses 108-109

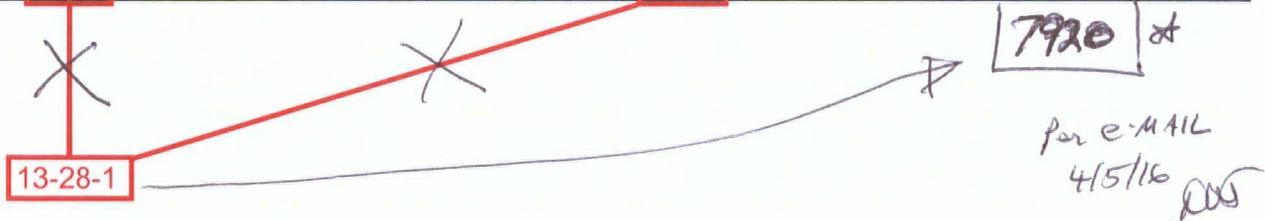
Proteus 108-109 combined

Proteus 108-109 Permit Numbers

Year	Month	Ink Usage					Ink Usage					Ink Usage					Ink Usage					Coating Usage					Throughput Usage		Emissions					
		Black Ink - V2-1					Jet Color Inks (Magenta)					Jet Color Inks (Yellow)					Jet Color Inks (Cyan)					Not Permitted for Coating					TOTAL	TOTAL VOC	TOTAL	TOTAL VOC				
		GAL	0.833 VOC/gal	VOC-lb	12-Month VOC Tons	12-Month VOC Tons	GAL	0.833 VOC/gal	VOC-lb	12-Month VOC Tons	12-Month VOC Tons	GAL	0.833 VOC/gal	VOC-lb	12-Month VOC Tons	12-Month VOC Tons	GAL	0.833 VOC/gal	VOC-lb	12-Month VOC Tons	12-Month VOC Tons	GAL	0 VOC/gal	VOC-lb	12-Month VOC Tons	12-Month VOC Tons	VOC Tons	Limit Tons	VOC Tons	Limit Tons				
2015	JAN	828	0.744	613.8	8565.7	3.27	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.27	30.7	3.27	30.7
2015	FEB	860	0.744	631.0	8545.7	3.27	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.27	30.7	3.27	30.7
2015	MAR	825	0.744	613.8	8565.5	3.25	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.25	30.7	3.25	30.7
2015	APR	855	0.744	656.1	8582.5	3.19	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.19	30.7	3.19	30.7
2015	MAY	770	0.744	572.6	8425.7	3.21	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.21	30.7	3.21	30.7
2015	JUN	825	0.744	613.8	8546.5	3.27	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.27	30.7	3.27	30.7
2015	JUL	770	0.744	572.6	8628.3	3.31	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.31	30.7	3.31	30.7
2015	AUG	805	0.744	601.1	8628.3	3.31	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.31	30.7	3.31	30.7
2015	SEP	790	0.744	572.1	8546.5	3.27	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.27	30.7	3.27	30.7
2015	OCT	805	0.744	601.1	8484.6	3.23	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.23	30.7	3.23	30.7
2015	NOV	440	0.744	327.4	8382.3	3.19	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.19	30.7	3.19	30.7
2015	DEC	805	0.744	601.1	6178.2	3.09	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0.833	0.0	0.0	0.00	0	0	0.0	0.0	0.00	0	0	0.0	0.00	3.09	30.7	3.09	30.7

12-12-3 (INK)

PTS-2 Hourly, Monthly, Annual Emissions													
(By-Products Sales Report - Bailed Paper from Cyclone #5 Only)													
Year	Month	Monthly Thrput lb	Monthly Thrput tons	12-Month Thrput tons	12-Month Thrput Limit tons	EF lb/ton	Monthly Emissions Lb	Monthly Emissions tons	12-Month Emissions tons	12-Month Em Limit tons	Days*	Monthly Hours Operated	Hourly Emissions Lb
2015	JAN	1,400,763	700	10,418	87,600	0.2	140	0.07	1.04	9.00	26	624	0.22
2015	FEB	1,435,587	718	10,585	87,600	0.2	144	0.07	1.06	9.00	26	624	0.23
2015	MAR	1,864,039	932	10,614	87,600	0.2	186	0.09	1.06	9.00	27	648	0.29
2015	APR	1,318,178	659	10,223	87,600	0.2	132	0.07	1.02	9.00	25	600	0.22
2015	MAY	1,227,007	614	10,061	87,600	0.2	123	0.06	1.01	9.00	28	672	0.18
2015	JUN	1,868,392	934	10,296	87,600	0.2	187	0.09	1.03	9.00	27	648	0.29
2015	JUL	1,718,845	859	10,296	87,600	0.2	172	0.09	1.03	9.00	30	720	0.24
2015	AUG	1,712,657	856	10,121	87,600	0.2	171	0.09	1.01	9.00	28	672	0.25
2015	SEP	1,894,128	947	10,008	87,600	0.2	189	0.09	1.00	9.00	30	720	0.26
2015	OCT	1,532,741	766	9,743	87,600	0.2	153	0.08	0.97	9.00	29	696	0.22
2015	NOV	1,654,447	827	9,870	87,600	0.2	165	0.08	0.99	9.00	24	576	0.29
2015	DEC	1,225,202	613	9,426	87,600	0.2	123	0.06	0.94	9.00	30	720	0.17





Valley Regional Office  
4411 Early Road, Harrisonburg, VA22801

Phone #: (540) 574-7800

Registration #: 81000

Report #: 308877

Site Name: R R Donnelley & Sons Co Harrisonburg Mfg North

CMS: Title V Major

Address: 2347 Kratzer Road, Harrisonburg, VA 22802 - 1004

Classification: Major/Potential Major

Contact: Justin Rogers: (540) 564-9548

### AIR INSPECTION REPORT

The purpose of this inspection report is to document DEQ's observations and provide the compliance status for requirements applicable to the facility. Presented below are the following:

- **Inspection Details** describe this inspection report
- **Compliance Summary** lists individual requirements addressed in the report
- **Inspection Summary** provides an overview of the inspector's observations
- **Inspection Checklist** provides additional details and individual observations related to specific requirements

#### Inspection Details

Inspection Date: Apr 5, 2016  
 Inspection Reason: Review Annual Update  
 Reporting Period: 01/01/2015 - 12/31/2015  
 Inspector: David Taylor  
 Inspection Result: In Compliance

Program Code	Subpart
SIP	
TITLE V	

#### Approvals

*David A. Taylor*

*B. Keith Fowler*

Inspector: David Taylor  
Signed Date: Apr 5, 2016

Supervisor: B. Keith Fowler



**Taylor, David (DEQ)**

---

**From:** Justin Rogers [justin.m.rogers@rrd.com]  
**Sent:** Tuesday, April 05, 2016 12:59 PM  
**To:** Taylor, David (DEQ)  
**Subject:** Harrisonburg North Emission Statement Correction

Good afternoon Dave,

I'm writing to you in order to correct an item on our recent Emission Statement submission. As you are aware, I inadvertently reported the 12-month thruput in tons for the PTS-2 system when it should have been the Hours of Operation. So, if you would, please change "Hours of Operation" from 9,426 to 7,920. You can verify this change on page 21 of 24 in the document I submitted.

My apologies for any inconvenience this has created. Please let me know if there is anything else you may need.

Regards,  
Justin

---

**Justin Rogers** | Environmental, Health and Safety Professional | RR Donnelley  
2347 Kratzer Road, Harrisonburg, VA 22802  
North Office: 540-564-9548  
South Office: 540-564-3998  
Email: [justin.rogers@rrd.com](mailto:justin.rogers@rrd.com)  
<http://www.rrdonnelley.com>

3/29/2016, 2:17 PM		Commonwealth of Virginia Department of Environmental Quality Annual Update Report for Calendar Year: <span style="border: 1px solid black; padding: 2px;">2015</span>	
Registration No.	81000	Office:	Valley Regional Office
Site Name:	R R Donnelley & Sons Co Harrisonburg Mfg North	County / City:	Rockingham County 165
Physical Location:	2347 Kratzer Road, Harrisonburg, VA 22802-1004	NAICS:	Books Printing 323117
Mailing Address:	2347 Kratzer Road Harrisonburg, VA 22802-1004	Employees:	900
Annual Update Report Contact:	Justin Rogers Phone: (540) 564-9548 Email:justin.rogers@rrd.com	Inspector:	David Taylor Phone: (540) 722-3446
Billing Contact:	Justin Rogers Phone: (540) 564-9548 Email:justin.rogers@rrd.com	Classification:	Major/Potential Major

**Process Data**

CEDS ID (RelPt-Unit- Process)	Process Description	Annual Throughput Annual Throughput by Season (%)				Fuel Data					
				Units		Sulfur (Wt%)		Ash (Wt%)		Heat Content (MMBtu/unit)	
		CY 2014	CY 2015			CY 2014	CY 2015	CY 2014	CY 2015	CY 2014	CY 2015
1-1-1	BLR-1 SPACE HEAT/NAT.GAS	0	0.29	Million Cubic Feet Burned		0		0		1000	
		<i>Dec-Feb</i>	<i>Mar-May</i>	<i>Jun-Aug</i>	<i>Sep-Nov</i>						
		50	25	0	25						
Unit Ref ID: 1											
2-2-1	BLR-2 SPACE HEAT/NAT.GAS	0	10.24	Million Cubic Feet Burned		0		0		1000	
		<i>Dec-Feb</i>	<i>Mar-May</i>	<i>Jun-Aug</i>	<i>Sep-Nov</i>						
		50	25	0	25						
Unit Ref ID: 2											
3-20-1	VOC LOSS - Pr 765-766, 770-773, 782, 784-785, 787, 790 & 791	0	38.33	Gallons Solvent Consumed		0		0		0	
		<i>Dec-Feb</i>	<i>Mar-May</i>	<i>Jun-Aug</i>	<i>Sep-Nov</i>						
		25	25	25	25						
Unit Ref ID: 20											
4-21-1	WASTE PAPER SHAVINGS	0	22,773	Tons Finished Product		0		0		0	
		<i>Dec-Feb</i>	<i>Mar-May</i>	<i>Jun-Aug</i>	<i>Sep-Nov</i>						
		25	25	25	25						
Unit Ref ID: 21											
5-22-1	VOC LOSS-S/F PRESS #751	0	1.32	Gallons Solvent Consumed		0		0		0	
		<i>Dec-Feb</i>	<i>Mar-May</i>	<i>Jun-Aug</i>	<i>Sep-Nov</i>						
		25	25	25	25						
Unit Ref ID: 22											

RECEIVED

by

APR - 1 2016

To: \_\_\_\_\_  
File: hd

4/4/16  
Cede

ROR  
4/5/16



per e-mail 4/5/16 OAG

13-28-1	PTS-2	0	<del>9,426</del> 7,920 ←				HOURS OPERATED						
		Dec-Feb	Mar-May	Jun-Aug	Sep-Nov								
		25	25	25	25	CY 2014	0	0	0				
Unit Ref ID: 28													

During the reporting period, have changes or corrections occurred?  Yes  No  
 If yes, briefly explain:

Based on the data you are reporting, are you aware of any potential air permit violations?  Yes  No  
 If yes, briefly explain:

**Document Certification**  
 I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official (Print) GARY CALLEO  
 Title V.P. OF MANUFACTURING  
 Signature *Gary Calleo* Date 3/29/16

Must be signed by a Responsible Official as defined in 9 VAC 5-20-230 of the Regulations for the Control and Abatement of Air Pollution, available at: <http://www.deq.virginia.gov/>

**Attachment B**

**Minor NSR Permit dated January 5, 2012,  
as amended August 5, 2015, and March 26, 2015**



# *COMMONWEALTH of VIRGINIA*

*DEPARTMENT OF ENVIRONMENTAL QUALITY*

## **STATIONARY SOURCE PERMIT TO MODIFY AND OPERATE**

This permit supersedes your permit dated January 5, 2012, as amended August 5, 2014.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

R. R. Donnelley & Sons Company Harrisonburg Manufacturing North  
2347 Kratzer Road  
Harrisonburg, Virginia 22802  
Registration No.: 81000  
Plant ID No.: 51-165-0114

is authorized to modify and operate

a commercial trade book printing facility

located at

2347 Kratzer Road  
Rockingham County, Virginia

in accordance with the Conditions of this permit.

Approved on: January 5, 2012

Amended on: August 5, 2014

Amended on: March 26, 2015

A handwritten signature in blue ink, appearing to be "B. J. ...", written over a horizontal line.

Deputy Regional Director, Valley Region

Permit consists of 14 pages.  
Permit Conditions 1 to 39.  
Source Testing Report Format.

## **INTRODUCTION**

This permit approval is based on the permit applications dated November 2, 1978, April 3, 1998, January 20, 2003, April 17, 2003, October 8, 2003, May 13, 2004, November 24, 2004, February 28, 2006, April 20, 2007, February 1, 2010, October 15, 2010, November 30, 2011, May 29, 2014, and February 2, 2015; a permit application received July 28, 2006; amendments dated December 21, 1978, February 7, 1979, April 14, 1998, June 16, 1998, February 4, 1999, February 12, 1999, February 24, 1999, March 25, 1999, April 22, 1999, August 2, 1999, March 31, 2000, April 18, 2000, April 25, 2000, May 31, 2000, June 8, 2000, July 19, 2001, August 8, 2001, May 5, 2003, December 27, 2004, January 4, 2005, January 31, 2005, February 2, 2005, February 4, 2005, February 7, 2005, February 10, 2005, February 11, 2005, July 11, 2005, July 28, 2006, February 1, 2007, February 2, 2007, and March 12, 2010; and supplemental information dated April 3, 2006, April 13, 2006, September 1, 2006, January 10, 2007, and January 25, 2007. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-10-20 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from DEQ will be either in writing or by personal contact.

The availability of information submitted to DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

## **PROCESS REQUIREMENTS**

1. **Equipment List** - Equipment at this facility consists of the following:

<b>Equipment permitted prior to the date of this permit</b>		
<b>Ref. No.</b>	<b>Equipment Description</b>	<b>Rated Capacity</b>
786	Harris Graphics M110A printing press	36,000 impressions per hour (maximum impression size 26.5" x 17.5")

<b>Equipment permitted prior to the date of this permit</b>		
<b>Ref. No.</b>	<b>Equipment Description</b>	<b>Rated Capacity</b>
765	Toshiba OA two-web offset printing press	38,000 impressions per hour (maximum impression size 34" x 19.375")
766	Toshiba OA two-web offset printing press	38,000 impressions per hour (maximum impression size 34" x 19.375")
770	Toshiba OA two-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")
771	Toshiba OA one-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")
772	Toshiba OA two-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")
773	Toshiba OA two-web offset printing press	36,000 impressions per hour (maximum impression size 34" x 38.75")
782	Harris M110-B two-web offset printing press (formerly designated Press 764)	38,000 impressions per hour (maximum impression size 26.5" x 17.75")
784	Harris M110-B two-web offset printing press	36,000 impressions per hour (maximum impression size 26.5" x 17.75")
785	Harris M110-B two-web offset printing press	36,000 impressions per hour (maximum impression size 26.5" x 17.75")
787	Harris M110-B two-web offset printing press	36,000 impressions per hour (maximum impression size 26.5" x 17.75")
790	Timson T48A one-web offset printing press	31,400 impressions per hour
791	Timson T48A one-web offset printing press	37,000 impressions per hour
105	Proteus Ink-Jet Digital Printing Press with coating unit Model 6034988	526,620 pages per hour 2.52 gallons of ink per hour 2.20 gallons of coating per hour
106	Proteus Ink-Jet Digital Printing Press with coating unit Model 6034988	526,620 pages per hour 2.52 gallons of ink per hour 2.20 gallons of coating per hour
107	Proteus Ink-Jet Digital Printing Press with coating unit Model 6034988	526,620 pages per hour 2.52 gallons of ink per hour 2.20 gallons of coating per hour
108	Proteus Ink-Jet Digital Printing Press Model 6038475	52,346 documents per hour 4.05 gallons of ink per hour
109	Proteus Ink-Jet Digital Printing Press Model 6038475	52,346 documents per hour 4.05 gallons of ink per hour
751	1989 Heidelberg 72FL sheetfed offset lithographic printing press consisting of five printing units	11,000 impressions per hour
783	Harris M110-B two-web offset printing press	36,000 impressions per hour (maximum impression size 26.5" x 17.75")
ADH	Binding line adhesive operations	-

Equipment permitted prior to the date of this permit		
Ref. No.	Equipment Description	Rated Capacity
PTS-1	Pneumatic trim scrap system, comprised of four Koger Type P air cyclones and related ductwork	combined capacity of 15 tons per hour
PTS-2	Pneumatic trim scrap system, comprised of one air cyclone and related ductwork	capacity of 15 tons per hour
WPD	Waste paper dust collection system	-

Specifications included in the permit under this Condition are for informational purposes only and do not form enforceable terms or conditions of the permit.  
 (9 VAC 5-80-1180 D 3)

2. **Emission Controls: Fountain Solution** - Volatile Organic Compounds (VOC) emissions from all web offset presses (Presses 765-766, 770-773, 782-786, 787, 790, and 791) shall be controlled by using a fountain solution containing alcohol substitutes and limiting the VOC content of the fountain solution to no more than a daily average of 5 percent by weight.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-260)
  
3. **Emission Controls: Ink** – VOC emissions from Presses 765-766, 770-773, 782, 784-785, 787, 790, and 791 shall be controlled by use of inks having VOC content of not more than 32 percent, by weight, as applied, calculated as a monthly average.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-260)
  
4. **Emission Controls: Ink** – VOC emissions from Presses 783 and 786 shall be controlled by the use of inks having VOC content of not more than 28 percent, by weight, as applied.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-260)
  
5. **Emission Controls: Ink** – VOC emissions from the presses with coating units (105-107) shall be controlled by the use of inks having VOC content of not more than 0.833 lb/gal, by weight.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-260)
  
6. **Emission Controls: Ink** – VOC emissions from Presses 108 and 109 shall be controlled by the use of inks having VOC content of not more than 0.866 lb/gal, by weight.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-260)
  
7. **Emission Controls: Coating** – VOC emissions from the presses with coating units (105-107) shall be controlled by the use of coatings having VOC content of not more than 0.30 lb/gal, by weight.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-260)

8. **Emission Controls: Regenerative Thermal Oxidizer** – VOC emissions from Presses 770 and 772 shall be controlled by the regenerative thermal oxidizer (RTO). The RTO shall be provided with adequate access for inspection and shall be in operation when either Press 770 or 772 is operating.  
(9 VAC 5-80-1180)

9. **Emission Controls** – For all printing presses and adhesive operations (ADH), VOC emissions controls from cleanup, washup, and disposal shall include the following, or equivalent, as a minimum:

- a. VOC shall not be intentionally spilled, discarded to sewers, stored in open containers, or handled in any other manner that would result in evaporation beyond that consistent with air pollution control practices for minimizing emissions.
- b. All VOC containing receptacles shall be closed at all times except during loading and unloading.
- c. VOC emissions from the disposal of fountain solutions, cleaning solutions, and other products containing more than 25 percent VOC by weight shall be reduced by reclamation or incineration.
- d. VOC emissions shall be reduced by storing cleaning solutions and applicators in covered containers or machines with remote reservoirs when not in use.
- e. VOC emissions from the use of blanket wash shall be controlled by limiting the daily average of the VOC portion of the cleaning solution to a composite vapor pressure of 10 mm Hg or less at 68 °F. Composite vapor pressure shall be determined as stated in 9 VAC 5-40-7810 C.

(9 VAC 5-80-1180, 9 VAC 5-50-260 and 9 VAC 5-50-20F)

10. **Emission Controls: Waste Paper Dust Collection System** – Particulate matter (PM) emissions generated by the waste paper dust collection system (WPD) shall be controlled by fabric filter. The fabric filter shall be provided with adequate access for inspection and shall be in operation when any binding line is operating.  
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

11. **Control Efficiency: Regenerative Thermal Oxidizer** – The RTO shall maintain a destruction efficiency for VOC emissions of no less than 95.0 percent, on a mass basis.  
(9 VAC 5-80-1180)

12. **Control Parameters: Regenerative Thermal Oxidizer** – The RTO shall maintain a minimum combustion chamber temperature equal to or higher than that determined during the most recent performance testing and a retention time of at least 0.80 seconds. The minimum combustion zone temperature shall be calculated as a three-hour average. Details

concerning the method of calculating the three-hour average combustion zone temperature shall be arranged with DEQ.

(9 VAC 5-80-1180)

13. **Monitoring Devices** – The RTO shall be equipped with devices to continuously measure and record the combustion chamber temperature. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the RTO is operating.

(9 VAC 5-80-1180 D)

14. **Monitoring Devices** - Each fabric filter shall be equipped with devices to continuously measure the differential pressure across the filter. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when any binding line is operating.

(9 VAC 5-80-1180 D and 9 VAC 5-50-260)

### **OPERATING/EMISSION LIMITATIONS**

15. **Fuels** – The approved fuels for the heatset printing presses (Presses 765-766, 770-773, 782-787, 790, and 791) are natural gas and propane. A change in fuels may require a permit to modify and operate.

(9 VAC 5-80-1180)

16. **Fuels** – The approved fuels for the RTO are natural gas and propane. A change in fuels may require a permit to modify and operate.

(9 VAC 5-80-1180)

17. **Throughput** - The throughput of VOC in inks, fountain solutions, and cleaning solvents in the following presses and in all materials for adhesive operations shall not exceed the following limits (tons per year):

<b>Process</b>	<b>Ink VOC</b>	<b>Fountain solution VOC</b>	<b>Blanket Wash / Cleaning solvent VOC</b>
Press 751	17.1		7.9
Press 783	5.4	0.5	0.67
Press 786	6.3	0.3	0.7
Adhesive operations (ADH)	12.5		

Throughput shall be calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

(9 VAC 5-50-260 and 9 VAC 5-80-1180)

18. **Throughput** – The throughput of VOC (tons per year) in inks, fountain solutions and cleaning solvents to Presses 765-766, 770-773, 782, 784-785, 787, 790, and 791 shall not exceed that allowed by the following formula:

$$x_u(0.80) + (x_c)(0.80)\left(1 - \frac{\varepsilon}{100}\right) + y_u + y_c\left[0.30 + 0.70\left(1 - \frac{\varepsilon}{100}\right)\right] + 0.50z_m + z_{au} \leq 69.5$$

where  $x_u$  = VOC (tons) in inks used in uncontrolled presses (Presses 765-766, 771, 773, 782, 784-785, 787, 790 and 791)  
 $x_c$  = VOC (tons) in inks used in controlled presses (Presses 770 and 772)  
 $\varepsilon$  = RTO destruction efficiency (percent) as determined in testing of RTO according to the initial performance testing  
 $y_u$  = VOC (tons) in fountain solution used in uncontrolled presses (Presses 765-766, 771, 773, 782, 784-785, 787, 790 and 791)  
 $y_c$  = VOC (tons) in fountain solution used in controlled presses (Presses 770 and 772)  
 $z_m$  = VOC (tons) in manual blanket wash/cleaning solvent used in uncontrolled presses (Presses 765-766, 771, 773, 782, 784-785, 787 and 790) and in controlled presses (Presses 770 and 772)  
 $z_{au}$  = VOC (tons) in automatic blanket wash/cleaning solvent used in uncontrolled presses (Presses 765-766, 771, 773, 782, 784-785, 787 and 790)

Throughput shall be calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

(9 VAC 5-50-260 and 9 VAC 5-80-1180)

19. **Throughput** – The throughput of paper to the pneumatic trim scrap system (PTS-1) shall not exceed 38,600 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

(9 VAC 5-80-1180)

20. **Throughput** – The throughput of paper to the pneumatic trim scrap system (PTS-2) shall not exceed 87,600 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by

adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-260)

21. **Throughput** - The throughput of VOC in the three Proteus presses with a coating unit (105-107) shall not exceed 38.2 tons per year. Throughput shall be calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.  
 (9 VAC 5-50-260 and 9 VAC 5-80-1180)

22. **Throughput** - The throughput of VOC in the two Proteus presses without a coating unit (108 and 109) shall not exceed 30.7 tons per year. Throughput shall be calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.  
 (9 VAC 5-50-260 and 9 VAC 5-80-1180)

23. **Emission Limits** – VOC emissions from the operation and cleaning of the following equipment shall be limited as specified below:

Process	VOC Emissions (tons/year)
Press 751	21.0
Press 783	5.2
Press 786	5.7
Presses 765-766, 770-773, 782, 784-785, 787, 790, and 791	69.5
Adhesive operations (ADH)	12.5

Annual emissions shall be calculated monthly as the sum of the previous consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. Compliance with these emission limits may be determined as stated in Conditions 2, 3, 4, 8, 17, and 18.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-260)

24. **Emission Limits** – Emissions from the operation of the three Proteus presses with a coating unit (105-107) shall not exceed the limits specified below:

VOC	8.72 lbs/hr	38.2 tons/yr
-----	-------------	--------------

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Hourly emissions shall be calculated monthly as a monthly average. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. Compliance with these emission limits may be determined as stated in Conditions 5, 7, and 21.

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

25. **Emission Limits** – Emissions from the operation of the two Proteus presses without a coating unit (108 and 109) shall not exceed the limits specified below:

VOC	7.02 lbs/hr	30.7 tons/yr
-----	-------------	--------------

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Hourly emissions shall be calculated monthly as a monthly average. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. Compliance with these emission limits may be determined as stated in Conditions 6 and 22.

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

26. **Emission Limits** – PM emissions from the following equipment shall be limited as specified below:

Pneumatic trim scrap system (PTS-1)	15 lbs/hr	19.3 tons/year
Waste paper dust collection (WPD)	0.01 gr/dscf	2.6 tons/year
Pneumatic trim scrap system (PTS-2)	0.05 gr/dscf	9.0 tons/year

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Hourly emissions shall be calculated monthly as a monthly average. Annual emissions shall be calculated monthly as the sum of the previous consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. Compliance with these emission limits may be determined as stated in Conditions 10 and 19.

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

27. **Visible Emission Limits** - Visible emissions from the following operations shall not exceed the percentage opacity indicated in the table below, as determined by EPA Method 9 (40 CFR 60, Appendix A). The limits shall apply at all times except for noted exclusions.

Process	% Opacity	Exclusions
Press 751 and Adhesive operations (ADH)	5	None
Heatset Presses 765-766, 770-773, 782-787, 790, and 791	10	None
Heatset Presses 770 and 772 (before installation of the RTO)	10	None
Heatset Presses 770 and 772 (after installation of the RTO)	5	None
Pneumatic trim scrap system (PTS-1)	20	Does not apply during startup, shutdown, and malfunction.
Waste paper dust collection (WPD)	5	None
Pneumatic trim scrap system (PTS-2)	10	None
Proteus presses with a coating unit (105 – 107)	10	Does not apply during startup, shutdown, and malfunction.
Proteus presses without a coating unit (108 and 109)	10	None

(9 VAC 5-80-1180 and 9 VAC 5-50-260)

**CONTINUING COMPLIANCE DETERMINATION**

28. **Stack Testing** - Upon request by DEQ, the permittee shall conduct additional performance tests for VOC from the RTO serving Presses 770 and 772 to demonstrate compliance with the destruction efficiency contained in Condition 11. The details of the tests shall be arranged with DEQ.

(9 VAC 5-80-1180 and 9 VAC 5-50-30 G)

29. **Visible Emissions Evaluation** - Upon request by DEQ, the permittee shall conduct additional visible emission evaluations from the heatset presses (Presses 765-766, 770-773, 782-787, 790, and 791), the Proteus presses with coating units (105-107), or the Proteus presses without a coating unit (108 and 109) to demonstrate compliance with the visible emission limits contained in this permit. The details of the tests shall be arranged with DEQ.

(9 VAC 5-80-1180 and 9 VAC 5-50-30 G)

**RECORDS**

30. **On Site Records** - The permittee shall maintain records of emissions data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with DEQ. These records shall include, but are not limited to:

- a. Monthly and annual material balance of VOC used at each Press 751, 783, and 786 (individually), and at adhesive operations (ADH), to include:
  - i. Throughput of VOC in each of the following: inks, fountain solutions, manual blanket wash, automatic blanket wash, other cleaning solvents, and adhesives; and
  - ii. Throughput of VOC disposed of offsite.
- b. Monthly and annual throughput of VOC in inks, in fountain solutions, in manual blanket wash, in automatic blanket wash and in other cleaning solvents shall each be recorded for Presses 770 and 772 (combined), and Presses 765-766, 771, 773, 782, 784-785, 787, 790, and 791 (combined).
- c. Monthly and annual VOC throughput (in tons) for the three Proteus presses with a coating unit (105-107) combined.
- d. Monthly and annual VOC throughput (in tons) for the two Proteus presses without a coating unit (108 and 109) combined.
- e. Monthly calculations according to the formula in Condition 18.
- f. Monthly and annual VOC emissions (in tons) for Presses 751, 783, and 786 (individually), Presses 765-766, 770-773, 782, 784-785, 787, 790, and 791 (combined), and adhesive operations (ADH).
- g. Monthly and annual VOC emissions (in tons) from the three Proteus presses with a coating unit (105-107) combined.
- h. Monthly and annual VOC emissions (in tons) from the two Proteus presses without a coating unit (108 and 109) combined.
- i. Material Safety Data Sheets (MSDS), Reference Method 24 test results, or other vendor information showing VOC content, toxic compound content, water content, and solids content for each ink, thinner, fountain solution, manual blanket wash, automatic blanket wash, other cleaning solvent, and adhesive used.
- j. VOC content of inks used in Presses 765-766, 770-773, 782, 784-785, 787, 790, and 791 in percent by weight as applied, calculated each month as a monthly average for the group.
- k. VOC composite partial vapor pressure of each blanket wash and cleaning solvent.
- l. Annual consumption of natural gas and propane for the RTO calculated monthly as the sum of each consecutive 12-month period.

- m. Operation and combustion temperature monitoring records for the RTO.
- n. Results of all stack tests and visible emission evaluations.
- o. Monthly and annual throughputs of paper to each pneumatic trim scrap system (PTS-1 and PTS-2).
- p. Hourly, monthly, and annual PM emissions from each pneumatic trim scrap system (PTS-1 and PTS-2). Hourly emissions shall be calculated each month as a monthly average (monthly paper throughput divided by monthly hours of pneumatic trim scrap system (PTS-1 and PTS-2) operation and multiplied by a DEQ-approved emission factor).
- q. Hours of operation of each pneumatic trim scrap system (PTS-1 and PTS-2), calculated monthly.
- r. Scheduled and unscheduled maintenance, and operator training as required in Condition 34.
- s. Records of bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment as required in Condition 35.

These records shall be available for inspection by DEQ and shall be current for the most recent five years.

(9 VAC 5-80-1180 and 9 VAC 5-50-50)

31. **Emissions Testing** - The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. This includes constructing the facility such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and providing stack or duct that is free from cyclonic flow. Sampling ports, safe sampling platforms, and access at the appropriate locations shall be provided when requested.

(9 VAC 5-80-1180 and 9 VAC 5-50-30 F)

### **GENERAL CONDITIONS**

32. **Permit Suspension/Revocation** – This permit may be suspended or revoked if the permittee:
- a. Knowingly makes material misstatements in the permit application or any amendments to it;
  - b. Fails to comply with the conditions of this permit;
  - c. Fails to comply with any emission standards applicable to a permitted emissions unit;

- d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or
- e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

(9 VAC 5-80-1210 F)

33. **Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
- c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

(9 VAC 5-80-1180 and 9 VAC 5-170-130)

34. **Maintenance/Operating Procedures** – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

35. **Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.  
(9 VAC 5-20-180 J and 9 VAC 5-80-1180 D)
36. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to DEQ, of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but not later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within 14 days of the discovery. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify DEQ, in writing.  
(9 VAC 5-80-1180 and 9 VAC 5-20-180 C)
37. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.  
(9 VAC 5-80-1180 and 9 VAC 5-20-180 I)
38. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify DEQ, of the change in ownership within 30 days of the transfer.  
(9 VAC 5-80-1240)
39. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.  
(9 VAC 5-80-1180)

## SOURCE TESTING REPORT FORMAT

### Report Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Test dates
4. Tester; name, address and report date

### Certification

1. Signed by team leader/certified observer (include certification date)
2. Signed by responsible company official
3. \*Signed by reviewer

### Copy of approved test protocol

### Summary

1. Reason for testing
2. Test dates
3. Identification of unit tested & the maximum rated capacity
4. \*For each emission unit, a table showing:
  - a. Operating rate
  - b. Test Methods
  - c. Pollutants tested
  - d. Test results for each run and the run average
  - e. Pollutant standard or limit
5. Summarized process and control equipment data for each run and the average, as required by the test protocol
6. A statement that test was conducted in accordance with the test protocol or identification & discussion of deviations, including the likely impact on results
7. Any other important information

### Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Sampling port location and dimensioned cross section Attached protocol includes: sketch of stack (elevation view) showing sampling port locations, upstream and downstream flow disturbances and their distances from ports; and a sketch of stack (plan view) showing sampling ports, ducts entering the stack and stack diameter or dimensions

### Test Results

1. Detailed test results for each run
2. \*Sample calculations
3. \*Description of collected samples, to include audits when applicable

### Appendix

1. \*Raw production data
2. \*Raw field data
3. \*Laboratory reports
4. \*Chain of custody records for lab samples
5. \*Calibration procedures and results
6. Project participants and titles
7. Observers' names (industry and agency)
8. Related correspondence
9. Standard procedures

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\* Not applicable to visible emission evaluations.

Attachment C

Compliance Assurance Monitoring (CAM) Plan

**Fabric Filter Compliance Assurance Monitoring Plan  
 (Each baghouse for Waste Paper Dust (WPD) collection system)**

<b>Indicator</b>	<b>Indicator 1</b>	<b>Indicator 2</b>	<b>Indicator 3</b>
<b>Measurement approach</b>	<p>Baghouse differential pressure</p> <p>Observe and record the operating differential pressure of each baghouse system, at least once per week.</p>	<p>Visible emissions</p> <p>At a minimum of once per week, visible emission observations shall be conducted at each baghouse exhaust point and the results (presence or absence of visible emissions) shall be recorded. If visible emissions are observed, a Method 9 VEE in accordance with 40 CFR 60, Appendix A may be conducted optionally to determine if an excursion occurs. Results shall be recorded upon completion of each Method 9. If visible emissions are observed and a Method 9 VEE is not conducted, then an excursion has occurred. If visible emissions inspections conducted during 12 consecutive weeks show no visible emissions, the permittee may reduce the monitoring frequency to once per month for that stack. Any time the monthly visible emissions inspections show visible emissions, or when requested by DEQ, the monitoring frequency shall be increased to once per week for that stack</p>	<p>Work practice: inspection</p> <p>Annual ductwork and internal bag filter inspections by a qualified employee to verify structural integrity. Results recorded upon completion of each inspection.</p>

<b>Indicator range</b>	2.5 ± 2.0 inches of water column (operation outside of this pressure range constitutes an excursion)	An excursion is defined as an average opacity greater than 5% during one six-minute period in any one hour.	Internal components (including each individual bag) of and all ductwork leading to each baghouse shall be repaired or replaced as needed (failure to perform annual internal inspection or to repair or replace components as needed in a timely manner constitutes an excursion)
<b>Quality Improvement Plan (QIP) Threshold</b>	No more than three excursions outside of the indicator range in any semi-annual reporting period.	No more than three excursions outside of the indicator range in any semi-annual reporting period.	N/A
<b><u>Performance criteria:</u></b>  <b>Data Representativeness</b>	The monitoring system for each baghouse consists of a differential pressure gauge that compares the pressures in the inlet and outlet ducts of each baghouse. Accuracy: ± 5% Range: 0-15 (BH1); 0-10 (BH2)	Observations are being made at the emission point of each baghouse.	Each fabric filter bag, unit housing, associated internal components and all ductwork leading from the binding lines to each baghouse shall be inspected for signs of wear, leakage, or other deterioration that may affect the efficient operation of the unit.
<b>Verification of operational status</b>	N/A	Records that indicate time, facility operational status and results of each observation shall be maintained on site.	Inspection records
<b>QA/QC practices and criteria</b>	Validation of pressure gauge conducted annually by comparing gauge reading to calibrated meter or by calibrating using pressure standard or according to manufacturer's instructions.	Qualified personnel to perform observations. Certified Method 9 observer shall perform Method 9 VEE.	Qualified personnel familiar with the operating principles of fabric filtration shall perform the inspection and maintenance.

<b>Monitoring frequency</b>	Pressure drop shall be measured continuously and observed at least weekly.	A minimum of once per week observation, unless no emissions observed for 12 consecutive weeks. Monitoring frequency then becomes once per month until visible emissions are observed.	Annually
<b>Data collection procedures</b>	Pressure drop shall be monitored and displayed continuously. Results of weekly observations shall be recorded in a log.	A log shall be kept showing the time, facility operational status and results of each observation and Method 9 VEE.	A record shall be kept of all inspections, observations, and any maintenance or corrective action taken.
<b>Averaging period</b>	N/A	N/A	N/A