

Louisville Metro Air Pollution Control District
701 West Ormsby Ave. Suite 303, Louisville, Kentucky 40203-3137
16 April 2016

Federally Enforceable District Origin Operating Permit
Statement of Basis

Owner/Source: International Paper Company

Plant Location: 4400 Progress Blvd., Louisville, Kentucky 40218

Date Application Received: 10 December 2010
3 July 2014
1 June 2015

Date of Draft Permit: 16 April 2016

District Engineer: Elise Venard

Permit No: O-0838-16-F

Plant ID: 0838 **SIC Code:** 2653

NAICS: 322211

Introduction:

This permit will be issued pursuant to District Regulation 2.17- *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), and particulate matter less than 10 microns (PM₁₀); and is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns (PM_{2.5}), unclassifiable for the 2012 standard for particulate matter less than 2.5 microns (PM_{2.5}) and partial non-attainment area for sulfur dioxide (SO₂).

Application Type/Permit Activity:

Initial Issuance

Permit Revision

Administrative

Minor

Significant

Permit Renewal

Compliance Summary:

Compliance certification signed

Compliance schedule included

Source is out of compliance

Source is operating in compliance

I. Source Information

1. **Product Description:** Corrugated box manufacturing and flexography printing.
2. **Process Description:** Unprocessed bolts of paper are put through printing presses and a flexographic press and are turned into corrugated boxes for various industrial and commercial uses.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent to this facility
4. **Emission Unit Summary:**

Emission Unit	Equipment Description
Plant-wide	Plant-wide requirements
U1	Six flexographic printing presses
U2	One corrugator
U3	One silo for starch, one cyclone for PM recycling
I.A.-1	One adhesive storage tank, one cold parts washer, one baler, two boilers

5. **Fugitive Sources:** All emission points are enclosed, no fugitive sources identified.
6. **Permit Revisions:**

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
Initial	172-04-F	3/31/2006	12/4/2005	Initial	Entire Permit	Initial Permit Issuance
NA	O-0838-16-F	TBA	4/16/2016	Renewal	Entire Permit	Permit renewal to include construction permits, STAR exempt status , and removal of: <ul style="list-style-type: none"> • Cyclone Separator (Permit 172-04-F, attachment 144-87) • American baler (Permit 172-04-F, attachment 145-87) • Ward 2-color printer/die cutter (Permit 172-04-F, attachment 145-87)

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
						<ul style="list-style-type: none"> Langston flexographic folder/gluer (Permit 172-04-F, attachment 527-91)

7. Construction Permit History:

Permit No.	Issue Date	Description
4-09-C	1/8/2009	Installation of corrugating machine
26-10-C	2/24/2010	Installation of Ward 3-color press
35314-12-C (R1)	6/13/2012	Installation of S&S flexographic press
F-13-1005-C	10/17/2013	Installation of Martin mini press
F-13-1007-C	12/11/2013	Installation of Aircon cyclone

8. Emission Summary:

Pollutant	District Calculated Actual Emissions (tn/yr) 2009 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	1.43	No
NO _x	1.71	No
SO ₂	0.010	No
PM ₁₀	1.31	No
VOC	11.48	Yes
Total HAPs	0.03	No
Single HAP	0.03	No

9. Applicable Requirements:

PSD 40 CFR 60 SIP 40 CFR 63
 NSR 40 CFR 61 District-Origin Other

10. MACT Requirements: The source has no future MACT requirements.

11. **Referenced non-MACT Federal Regulations in Permit:** There are no federal regulations referenced in this permit.

II. Regulatory Analysis

1. **Acid Rain Requirements:** International Paper Company is not subject to the Acid Rain Program.
2. **Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. International Paper Company does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
3. **Prevention of Accidental Releases 112(r):** International Paper Company does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.
4. **40 CFR Part 64 Applicability Determination:** International Paper Company is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*.
5. **Basis of Regulation Applicability**

- a. **Plant-wide**

International Paper Company is a potential major source for the pollutant VOC. Regulation 2.17 – *Federally Enforceable District Origin Operating Permits* establishes requirements to limit the plant wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements. The source requested limits of the criteria pollutants VOC < 25 tn/yr and PM₁₀ < 25 tn/yr, to be a FEDOOP STAR Exempt source as defined by Regulation 5.00, section 1.13.5. The source is not major for Greenhouse Gases.

Regulation 2.17, section 5.2, requires monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the district upon request.

Regulation 2.17, section 7.2, requires stationary sources for which a FEDOOP is issued shall submit an Annual Compliance Certification by

April 15, of the following calendar year. In addition, as required by Regulation 2.17, section 5.2, the source shall submit an Annual Compliance Report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

b. **Emission Unit U1 – Printing presses**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
Ward, 3-color, 66"x113", flexographic printer	10,000 sheet/hour	2010	2.17 6.29 7.08	Regulation 2.17 applies to any stationary source, or one or more processes or process equipment at a stationary source, for which the owner or operator voluntarily applies for a federally enforceable District origin operating permit. Regulation 6.29 applies to each printing line for packaging rotogravure, publication rotogravure, specialty rotogravure, or flexographic printing. Regulation 7.08 applies to equipment installed after September 1, 1976 and subject to the PM emission standard.
S&S flexographic, 38"x94", 2-color, flexographic printer	15,000 sheet/hour	2013		
Martin mini, 24"x66", 2-color, flexographic printer/folder/gluer	24,000 sheet/hour	2013		
Ward 37"x 96", flexography printer, folder, gluer	18,000 sheet/hour	2005		
Ward, 66"x125", flexographic printer/folder/gluer /die cutter	10,000 sheet/hour	2002		
Martin DR 01628, 66"x113", flexographic printer/rotary die cutter	10,000 sheet/hour	1999		

ii. **Standards/Operating Limits**

1) **VOC**

- (a) Regulation 6.29 regulation provides for the control of volatile organic compound emissions from graphic arts facilities that use rotogravure or flexographic printing.

2) **PM/PM₁₀**

- (a) The emission standard for PM at each emission point with a process throughput of less than 30 tn/hr is determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM lb/hr limit} = 3.59 (\text{process weight tn/hr})^{0.62}$$

3) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.

c. **Emission Unit U2 – Corrugator**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
Corrugator/gluer	435,000 ft ² /hr	2009	2.17 7.08 7.25	<p>Regulation 2.17 applies to any stationary source, or one or more processes or process equipment at a stationary source, for which the owner or operator voluntarily applies for a federally enforceable District origin operating permit.</p> <p>Regulation 7.08 applies to equipment installed after September 1, 1976 and subject to the PM emission standard.</p> <p>Regulation 7.25 provides for the control of emissions of volatile organic compounds from new (built after December 16, 1987) sources.</p>

ii. **Standards/Operating Limits**

1) **VOC**

- (a) Regulation 7.25 establishes VOC standards.

2) **PM/PM₁₀**

- (a) The emission standard for PM at each emission point

with a process throughput of less than 30 tn/hr is determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM lb/hr limit} = 3.59 (\text{process weight tn/hr})^{0.62}$$

3) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.

d. **Emission Unit U3 – Cyclone and Silo**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
Aircon cyclone separator, model 18/10, recycling operation, $\eta = 90\%$	10,717 lb/hr	2013	2.17 7.08	Regulation 2.17 applies to any stationary source, or one or more processes or process equipment at a stationary source, for which the owner or operator voluntarily applies for a federally enforceable District origin operating permit.
Starch silo, permitted cap = 54,000 lb/hr	27 ton.hr	2000		Regulation 7.08 applies to equipment installed after September 1, 1976 and subject to the PM emission standard.

ii. **Standards/Operating Limits**

1) **PM/PM₁₀**

- (a) The emission standard for PM at each emission point with a process throughput of less than 30 tn/hr is determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM lb/hr limit} = 3.59 (\text{process weight tn/hr})^{0.62}$$

2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.

III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Operational Flexibility:** The source did not request any operation flexibility.
5. **Compliance History:** There are no records of any viable violations of the terms of the present or prior construction or operating permits.
6. **Calculation Methodology or Other Approved Method:**

a. VOC

- i. The owner or operator shall calculate VOC emissions from the flexographic printing by using the formulas shown below, unless another method is approved in writing by the District:

$$\text{Plant wide } \text{VOC} = (\text{Ink } \text{VOC}) + (\text{Cleaner } \text{VOC}) + (\text{Antifoam } \text{VOC}) + (\text{Glue } \text{VOC})$$

$$\text{Ink}_{\text{VOC(ton)}} = [(\text{Ink purchased or used (gal/month)})(\text{Density (lb/gal)})(\text{VOC content (\%)})(\frac{1 \text{ ton}}{2000 \text{ lb}})] \text{ or}$$

$$\text{Ink}_{\text{VOC(ton)}} = [(\text{Ink purchased or used (gal/month)})(\text{VOC content (lb/gal)})(\frac{1 \text{ ton}}{2000 \text{ lb}})]$$

$$\text{Cleaner } \text{VOC}$$

$$= [(\text{Cleaner purchased or used (gal/month)})(\text{Density } (\frac{\text{lb}}{\text{gal}})(\text{VOC content (\%)})(\frac{1 \text{ ton}}{2000 \text{ lb}})]$$

$$\text{Antifoam } \text{VOC}$$

$$= [(\text{Antifoam purchased or used (gal/month)})(\text{Density } (\frac{\text{lb}}{\text{gal}})(\text{VOC content (\%)})(\frac{1 \text{ ton}}{2000 \text{ lb}})]$$

$$\text{Adhesive } \text{VOC} = (\text{Material purchased or usage amount})(\text{Wt \% VOC})(1 - \text{Control Efficiency})$$

b. PM/PM₁₀

- i. The owner or operator shall calculate PM₁₀ emissions from Printer 4, Printer 5, and Printer 6, Corrugator, Cyclone, and Starch silo utilizing the formula shown below, unless another method is approved in writing by the District¹:

¹ The PM₁₀ emissions from the printers and corrugator is accounted for through the trim that the cyclone processes.

$$\text{Plant wide PM}_{10} = \text{Cyclone PM}_{-10} + \text{Starch silo PM}_{-10}$$

$$\text{Cyclone PM}_{-10} = (A)(B) \left(\frac{1 \text{ ton}}{2000 \text{ lb}} \right) \left(\frac{\text{number of operating hours}}{1 \text{ month}} \right)$$

$$A = \text{cyclone capacity} \left(\frac{\text{lb trim}}{\text{hr}} \right)$$

$$B = \text{emission factor} \left(0.001 \frac{\text{lb}}{\text{lb trim}} \right)^*$$

*District standard

$$\text{Starch silo PM}_{-10} = (A)(B) \left(\frac{1 \text{ ton}}{2000 \text{ lb}} \right) \left(\frac{\text{number of operating hours}}{1 \text{ month}} \right)$$

$$A = \text{silo capacity} \left(\frac{\text{ton}}{\text{hr}} \right)$$

$$B = \text{emission factor} \left(0.27 \frac{\text{lb}}{\text{ton}} \right)^*$$

*District standard

7. Insignificant Activities

Equipment	Quantity	PTE (tpy)	Regulation Basis
Adhesive storage tank	1	VOC=3.640	Regulation 1.02
Safety-Kleen SK44 cold parts washer	1	VOC=0.410	Regulation 1.02
American baler with process cyclone	1	PM ₁₀ =3.72	Regulation 1.02
Miura boiler	2	NO _x =3.860 each PM ₁₀ = 0.29 each	Regulation 1.02

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.
- 2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements.
- 3) The owner or operator shall annually submit an updated list of insignificant activities that occurred during the preceding year, with the compliance certification due April 15th.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) as the annual emissions for each piece of equipment.
- 6) The District has determined that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.

a. **IA-1 Equipment – Minor Emission Points**i. **Equipment**

Emission Point	Equipment	Applicable Regulations	Basis for Applicability
Storage tank	Adhesive storage tank	7.12	Regulation 7.12 applies to each storage vessel for volatile organic compounds that commences construction or modification on or after April 19, 1972
Parts washer	Safety-Kleen SK44 with secondary reservoir	6.18	Regulation 6.18 applies to cold cleaners that use volatile organic compounds.
Baler 1	American baler with process cyclone, 3400 pound/hour	7.08	Regulation 7.08 applies to equipment installed after September 1, 1976 and subject to the PM emission standard.
Boilers 1 & 2	(2) Miura boiler, 9.0 MMBtu/hour	7.06	Regulation 7.06 applies to equipment installed after April 9, 1972, and subject to the PM, Opacity, and SO ₂ standards.

ii. **Standards/Operating Limits**1) **VOC**

- (a) Regulation 6.18 provides for the control of emissions from solvent metal cleaning equipment.
- (b) Regulation 7.12 provides for the control of emissions from new storage vessels for volatile organic compounds.

2) **PM/PM₁₀**

- (a) The emission standard for PM for the baler with a process throughput of less than 30 tn/hr is determined in accordance with Regulation 7.08,

section 3.1.2 as follows:

$$\text{PM lb/hr limit} = 3.59 (\text{process weight tn/hr})^{0.62}$$

- (b) Boilers 1 and 2 are subject to Regulation 7.06. In accordance with Regulation 7.06, section 4, the emission standard for PM is 0.488 lb/MMBtu/hr.

3) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for the baler that commenced construction after September 1, 1976.
- (b) Regulation 7.06, section 4.2 establish opacity standards for boilers 1 and 2.

4) **SO₂**

- (a) Boilers 1 and 2 are subject to Regulation 7.06. In accordance with Regulation 7.06, section 5, the emission standard for SO₂ is 1.0 lb/MMBtu/hr.