

June 24, 2004

Certified Mail: 7000 0600 0023 5190 3927

Mr. Brian Bokovoy  
Flint Ink North America Corporation  
4600 Arrowhead Drive  
Ann Arbor, MI 48105-2773

Re: Registered Construction and Operation Status, 097-18854-00525

Dear Mr. Bokovoy:

The application from Flint Ink North America Corporation, received on April 16, 2004, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following units at the ink manufacturing plant, located at 4910 West 78<sup>th</sup> Street, Indianapolis, Indiana 46268, are classified as registered:

- (a) Two (2) ink premixer tubs, installed in 1990, with a combined maximum throughput of 22,000 tons of ink per year, using a baghouse, identified as baghouse 1, as particulate control, and exhausting to stack 1.
- (b) Four (4) mixers, installed in 1990, with a combined maximum throughput of 22,000 tons of ink per year, using a baghouse, identified as baghouse 2, as particulate control, and exhausting to stack 2.
- (c) Five (5) dry material grinding mills, installed in 1990, with a combined maximum throughput of 22,000 tons per year, using no control, and exhausting to the atmosphere.
- (d) Blending tanks, installed in 1990, with a combined maximum throughput of 22,000 tons of ink per year, using no control, and exhausting to the atmosphere.
- (e) Twenty-one (21) indoor liquid storage tanks, installed in 1990, with a combined maximum capacity of 22,000 tons of ink per year, using no control, and exhausting to the atmosphere.
- (f) One (1) natural gas fired boiler, installed in 1990, with a maximum heat input capacity of 2.1 million Btu per hour (MMBtu/hr), using no control, and exhausting to the atmosphere.

The following conditions shall be applicable:

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-2-4 (Particulate Matter Limitations for Sources of Indirect Heating)

The natural gas fired boiler is subject to the provisions of 326 IAC 6-2-1(d) because it is located in Marion County and was constructed after September 21, 1983. Particulate emissions from indirect heating facilities shall be limited by the following equation:

$$Pt = 1.09/Q^{0.26} = 1.09/2.1^{0.26} = 1.32$$

where Pt = Pounds of particulate matter emitted per million Btu (lb/mmBtu) heat input

Q = Total source maximum operating capacity rating in million Btu per hour mBtu/hr) heat input.

For Q less than 10 mm Btu per hour (mmBtu/hr), Pt shall not exceed 0.60 pounds per million Btu (lb/mmBtu). Total maximum operating capacity is less than 10 million Btu per hour (mmBtu/hr). Therefore, particulate matter emissions from the natural gas fired boiler shall not exceed 0.6 pounds per million Btu (lbs/mm Btu).

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The particulate emissions from the premixers, mixers, mills, and blenders shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Emission Unit	Process weight rate (tons/hr)	Particulate Emission Limit (pounds per hour)
Premixers	2.5	7.6
Mixers	2.5	7.6

The affected units comply with this emissions limit through the use of baghouses.

326 IAC 12 (New Source Performance Standards)

- (a) Pursuant to 40 CFR 60.116b(c), the Permittee shall maintain records of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period for the following storage tanks T-101, T-102, and T-103.
- (b) Pursuant to 40 CFR 60.116b(d), the Permittee shall notify IDEM, OAQ, and within 30 days when the maximum true vapor pressure of the liquid stored in tanks T-101, T-102, or T-103 exceeds 4.0 psia (27.6 kPa).

This registration is issued to this source. The source may operate according to 326 IAC 2-5.5.

Flint Ink North America Corporation  
Indianapolis, Indiana  
Permit Reviewer: Angelique Oligier

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An authorized individual shall provide an annual notice to the Office of Air Quality (OAQ) and the Office of Environmental Services (OES) that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

**Compliance Data Section  
Office of Air Quality  
100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, IN 46206-6015**

**and**

**Office of Environmental Services  
Air Quality Management Section, Compliance Data Group  
2700 South Belmont Avenue  
Indianapolis, Indiana 46221-2097**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to OAQ and OES if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

ORIGINAL SIGNED BY

John B. Chavez  
Administrator

aco

cc: File, Marion County  
Air Compliance, Matt Mosier  
IDEM, Mindy Hahn  
Permits, Angelique Oligier

<b>Registration Annual Notification</b>
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This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3).

<b>Company Name:</b>	<b>Flint Ink North America Corporation</b>
<b>Address:</b>	<b>4910 West 78<sup>th</sup> Street</b>
<b>City:</b>	<b>Indianapolis, Indiana 46268</b>
<b>Authorized individual:</b>	<b>Brian Bokovoy</b>
<b>Phone #:</b>	<b>(734) 622-6767</b>
<b>Registration #:</b>	<b>097-18854-00525</b>

I hereby certify that **Flint Ink North America Corporation** is still in operation and is in compliance with the requirements of Registration 097-18854-00525.

<b>Name (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Date:</b>

**Indiana Department of Environmental Management  
Office of Air Quality  
and  
City of Indianapolis  
Office of Environmental Services**

**Technical Support Document (TSD) for a Registration**

**Source Background and Description**

**Source Name:** Flint Ink North America Corporation  
**Source Location:** 4910 West 78<sup>th</sup> Street, Indianapolis, Indiana 46268  
**County:** Marion  
**SIC Code:** 2893  
**Operation Permit No.:** 097-18854-00525  
**Permit Reviewer:** Angelique Oliger

The Office of Environmental Services (OES) has reviewed an application from Flint Ink North America Corporation relating to the operation of an ink manufacturing plant.

**Permitted Emission Units and Pollution Control Equipment**

The source consists of the following permitted emission units and pollution control devices:

- (a) Two (2) ink premixer tubs, installed in 1990, with a combined maximum throughput of 22,000 tons of ink per year, using a baghouse, identified as baghouse 1, as particulate control, and exhausting to stack 1.
- (b) Four (4) mixers, installed in 1990, with a combined maximum throughput of 22,000 tons of ink per year, using a baghouse, identified as baghouse 2, as particulate control, and exhausting to stack 2.
- (c) Five (5) dry material grinding mills, installed in 1990, with a combined maximum throughput of 22,000 tons per year, using no control, and exhausting to the atmosphere.
- (d) Blending tanks, installed in 1990, with a combined maximum throughput of 22,000 tons of ink per year, using no control, and exhausting to the atmosphere.
- (e) One (1) natural gas fired boiler, installed in 1990, with a maximum heat input capacity of 2.1 million Btu per hour (MMBtu/hr), using no control, and exhausting to the atmosphere.

- (f) Twenty-one (21) indoor liquid storage tanks, listed below, installed in 1990, with a combined maximum capacity of 22,000 tons of ink per year, using no control, and exhausting to the atmosphere.

Tank ID	Capacity (m <sup>3</sup> )
T-101	114
T-102	114
T-103	114
T-104	38
T-105	38
T-106	49
T-107	49
T-803	38
T-804	38
T-805	38
T-806	38
T-821	38
T-822	38
T-823	38
T-824	38
BT-232	21
BT-233	21
BT-234	21
BT-235	11
BT-237	11
ST-814	38
ST-815	38

### Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

OP 5604-01 and 5604-02, issued on March 18, 1994.

All conditions from previous approvals were incorporated into this permit.

### Enforcement Issue

There are no enforcement actions pending.

### Recommendation

The staff recommends to the Administrator that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An administratively complete application for the purposes of this review was received on April 16, 2004.

### Emission Calculations

See Appendix A (six pages) of this document for detailed emissions calculations.

### Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	8.95
PM-10	9.00
SO <sub>2</sub>	0.01
VOC	2.41
CO	0.77
NO <sub>x</sub>	0.92
Single HAP	negligible
Combination of HAPs	negligible

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of particulate matter (PM) and PM-10 is equal to or greater than five (5) tons per year and less than twenty-five (25) tons per year. The potential to emit (as defined in 326 IAC 2-7-1(29)) of VOC is less than ten (10) tons per year. The potential to emit (as defined in 326 IAC 2-7-1(29)) of all other criteria pollutants is less than twenty-five (25) tons per year. Therefore, the source is registered and subject to the provisions of 326 IAC 2-5.1-2.
- (b) Fugitive Emissions  
 Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

### Actual Emissions

No previous emission data has been received from the source.

### County Attainment Status

The source is located in Marion County.

Pollutant	Status
PM-10	attainment
SO <sub>2</sub>	maintenance attainment
NO <sub>2</sub>	attainment
8-hour Ozone	maintenance attainment
1-hour Ozone	basic nonattainment
CO	attainment
Lead	unclassifiable

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Marion County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for nonattainment new source review.
- (b) Marion County has been classified as attainment or unclassifiable in Indiana for PM10, SO<sub>2</sub>, NO<sub>2</sub>, CO, and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.
- (c) Fugitive Emissions  
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

### Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Potential To Emit (tons/year)
PM	8.95
PM-10	9.00
SO <sub>2</sub>	0.01
VOC	2.41
CO	0.77
NO <sub>x</sub>	0.92
Single HAP	negligible
Combination of HAPs	negligible

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

### Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

### Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

- (1) Steam generating units that have a maximum design heat input capacity of less than ten (10) million Btu per hour (10 mm Btu/hr) are not subject to 40 CFR Part 60 Subpart Dc. Therefore, the natural gas fired boiler is not subject to 40 CFR Part 60 Subpart Dc.
  - (2) Storage tanks, identified as T-101, T-102, and T-103 have capacities of greater than seventy-five (75) cubic meters (m<sup>3</sup>), they were installed after 1984, and they store volatile organic liquid. However, they are not subject to the New Source Performance Standard, 326 IAC 12 (40 CFR 60.116b, Subpart Kb), because they are used to store liquids with a maximum vapor pressure of less than 2.2 psia. None of the other storage tanks are subject to 40 CFR 60.116b, Subpart Kb because they have capacities of less than seventy-five (75) cubic meters (m<sup>3</sup>).
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14 and 40 CFR Part 63) applicable to this source.

### State Rule Applicability

#### 326 IAC 2-1.1-5 (Non-attainment New Source Review)

This source is not subject to 326 IAC 2-1.1-5 because it has the potential to emit less than 100 tons of NO<sub>x</sub> and less than 100 tons of VOC per year.

#### 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Requirements)

This source is not a major source. This source is not one (1) of the twenty-eight (28) listed source categories. The potential to emit each criteria pollutant from the entire source is less than 250 tons per year. Therefore, this source is a minor source and the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Requirements) are not applicable.

#### 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)

This source will emit less than ten (10) tons per year of a single HAP or twenty-five (25) tons per year of a combination of HAPs, and construction occurred before July 27, 1997. Therefore, 326 IAC 2-4.1 does not apply.

#### 326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), because it is located in Marion County, it is not required to have an operating permit under 326 IAC 2-7, Part 70 Permit Program, and it does not emit lead into the ambient air at levels equal to or greater than five (5) tons per year.

#### 326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

#### 326 IAC 6-1 (Nonattainment Area Limitations)

This rule does not apply to this source because actual emissions of particulate are less than ten tons per year, and the potential to emit of particulate is less than one hundred (100) tons per year, and it is not a specifically listed source in 326 IAC 6.

326 IAC 6-2-4 (Particulate Matter Limitations for Sources of Indirect Heating)

The natural gas fired boiler is subject to the provisions of 326 IAC 6-2-1(d) because it is located in Marion County and was constructed after September 21, 1983. Particulate emissions from indirect heating facilities shall be limited by the following equation:

$$Pt = 1.09/Q^{0.26} = 1.09/2.1^{0.26} = 1.32$$

where Pt = Pounds of particulate matter emitted per million Btu (lb/mmBtu) heat input

Q = Total source maximum operating capacity rating in million Btu per hour mBtu/hr) heat input.

For Q less than 10 mm Btu per hour (mmBtu/hr), Pt shall not exceed 0.60. Total maximum operating capacity is less than 10 million Btu per hour (mmBtu/hr). Therefore, particulate matter emissions from the natural gas fired boiler shall not exceed 0.6 pounds per million Btu (lbs/mm Btu).

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The particulate emissions from the premixers, mixers, mills, and blenders shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Emission Unit	Process weight rate (tons/hr)	Particulate Emission Limit (pounds per hour)
Premixers	2.5	7.6
Mixers	2.5	7.6

The affected units comply with this emissions limit through the use of baghouses.

326 IAC 7-1 (Sulfur Dioxide Emission Limitations)

This rule does not apply to this source because the potential to emit of each individual unit is less than 25 tons per year or 10 pounds per hour of Sulfur Dioxide.

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

The Permittee has no individual facility with the potential to emit more than twenty-five (25) tons per year of VOCs. Therefore, 8-1-6 does not apply.

326 IAC 12 (New Source Performance Standards)

The tanks identified as T-101, T-102, T-103, T-106 and T-107 are subject to 40 CFR 60, Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984) as the rule existed prior to October 2003 because these tanks have storage capacities greater than 40 cubic meters (10,566 gallons).

- (a) Storage tanks T-106 and T-107, which have capacities greater than 40 cubic meters (10,566 gallons) and less than 75 cubic meters (19,813 gallons), are subject only to the record keeping requirements in 40 CFR 60.116b(b).

- (b) Storage tanks T-101, T-102, and T-103 are subject only to the recordkeeping requirements in 40 CFR 60.116b(b) and the reporting requirements in 40 CFR 60.116b(d) because they have capacities greater than 75 cubic meters (19,813 gallons) but less than 151 cubic meters (39,890 gallons) and are used to store liquids with a maximum vapor pressure of less than 2.2 psia.
  
- (c) Although EPA revised the applicability criteria for 40 CFR 60, Subpart Kb in October 2003, the previous version of 40 CFR 60, Subpart Kb is still applicable to sources in Indiana pursuant to 326 IAC 12 and 326 IAC 1-1-3. Once the revised version of 40 CFR 60, Subpart Kb is incorporated into the Indiana Administrative Code, the storage tanks listed below will no longer be subject to the record keeping requirements in 40 CFR 60.116b(a) and (b):
  - (1) Tanks T-106 and T-107 because they have storage capacities less than 75 cubic meters (19,813 gallons);
  
  - (2) Tanks T-101, T-102, and T-103 because these storage tanks have capacities greater than 75 cubic meters (19,813 gallons) but less than 151 cubic meters (39,890 gallons) and are used to store liquids with a maximum vapor pressure of less than 2.2 psia.

## **Conclusion**

The operation of this ink manufacturer shall be subject to the conditions of the attached proposed Registration 097-18554-00525.

## VOC Emissions From News Ink Production

Company Name: Flint Ink North America Corporation  
 Address City IN Zip: 4910 West 78th Street  
 CP: 097-18854-00525  
 Reviewer: Angelique Oligier  
 Date: April 28, 2004

Additive	Emissions Factor, (lb VOC / batch)*							Total (lb VOC / batch)	Hours per batch	Emissions (ton VOC/yr) <sup>1</sup>
	Dispersing Tank		Holding Tank	Shot Mill	Blend Tank	Fill Areas	Open-Top Tanks			
	Materials Additions and Vapor Displacement	Heatup Losses			Heatup/ Evap Losses	Charging/ Evap Losses	Surface Evaporative Losses - Fugitive			
Hydrotreated Heavy Naphthenic Distillate (Black)	9.30E-05	1.60E-10	7.40E-15	1.10E-21	4.90E-21	8.70E-06		1.02E-04	5	8.91E-05
Diethylene Glycol	5.50E-06	9.40E-12	1.60E-14	3.69E-23	1.20E-23	5.20E-06		1.07E-05	8	5.86E-06
Dipropylene Glycol	1.10E-07	9.30E-12	6.60E-15	7.50E-27	1.20E-25	1.80E-06		1.91E-06	8	1.05E-06
Diethylene Glycol Monoethyl Ether	2.50E-08	8.80E-14	8.80E-15	2.18E-28	2.80E-28	6.20E-07		6.45E-07	8	3.53E-07
Triethylene Glycol	2.10E-08	1.20E-14	1.90E-16	2.44E-29	1.70E-29	3.70E-07		3.91E-07	8	2.14E-07
Ethylene Glycol (Black)	3.50E-09	3.50E-15	2.00E-17	1.34E-31	4.30E-32	6.10E-08		6.45E-08	8	3.53E-08
Dipropylene Glycol Monomethyl Ether	5.30E-09	1.10E-16	5.30E-20	1.36E-29	9.60E-30	1.80E-07		1.85E-07	8	1.01E-07
Hydrotreated Heavy Naphthenic Distillate (Colored)	4.80E-06	2.80E-14	1.40E-19		2.70E-26	4.10E-06	1.00E-02	1.00E-02	5	8.77E-03
Straight-Run Middle Distillate	2.70E-05	4.70E-12	2.40E-15		5.80E-23	4.80E-05	3.30E-01	3.30E-01	5	2.89E-01
Styrene	8.10E-07	5.52E-13	1.90E-13		1.90E-24	2.80E-05	2.50E-01	2.50E-01	3	3.65E-01
Morpholine	8.40E-08	2.50E-14	2.00E-14		1.80E-26	1.10E-05	1.00E-01	1.00E-01	3	1.46E-01
Dipropylene Glycol	3.30E-09	1.30E-17	7.00E-21		9.30E-33	2.50E-07	0.00E+00	2.53E-07	3	3.70E-07
Diethylene Glycol Monoethyl Ether	5.40E-10	9.70E-19	6.50E-22		1.70E-34	1.00E-07	0.00E+00	1.01E-07	3	1.47E-07
2,4,7,9 - Tetramethyl- 5-Decyne-4,7-Diol	7.50E-09	3.60E-17	1.70E-20		4.40E-32	3.80E-07	0.00E+00	3.88E-07	3	5.66E-07
Propylene Glycol	6.00E-09	5.80E-17	5.30E-20		3.40E-31	3.00E-07	0.00E+00	3.06E-07	3	4.47E-07
Acrylic Acid	1.00E-09	2.70E-17	5.70E-18		1.70E-31	7.80E-07	1.00E-02	1.00E-02	3	1.46E-02
2-Amino-2- Methylpropanol	1.10E-06	1.00E-12	4.30E-13		7.10E-24	3.30E-05	3.20E-01	3.20E-01	3	4.67E-01
Ethylene Glycol (Color)	6.70E-11	6.60E-20	4.40E-23		6.20E-36	2.50E-08	0.00E+00	2.51E-08	3	3.66E-08
Hydroxymethyl Amino Ethanol	1.40E-06	1.30E-12	3.70E-12		1.00E-23	6.80E-05	5.30E-01	5.30E-01	3	7.74E-01
									<b>Total</b>	<b>2.06</b>

\* Emission Factors based on "Preferred and Alternative Methods for Estimating Air Emissions from Paint and Ink Manufacturing Facilities," August 2000.

(1) Total Emissions = 8760 hrs / yr \* 1 batch / hours \* lbs VOC / batch \* 1 ton / 2000 lbs

## VOC Emission From Transfer Operations

Company Name: Flint Ink North America Corporation  
 Address City IN Zip: 4910 West 78th Street  
 CP: 097-18854-00525  
 Reviewer: Angelique Oligier  
 Date: April 28, 2004

Process	Saturation Factor	Vapor Pressure (psia)	Vapor Molecular Weight (lb/lb-mole)	Volume of Product Loaded (Mgal/yr)	Temperature of Product Loaded (°R)	Total VOC Emissions (lb/yr) <sup>1</sup>
Black New Ink (Oil Based), Finished Product Unloading	1.45	5.80E-05	350	2293	535	1.57
Black New Ink (Oil Based), Raw Material Unloading	1.45	5.80E-05	350	1134	535	0.78
Black New Ink (Water Based), Finished Product Unloading	1.45	1.20E-03	125	1864	535	9.44
Black New Ink (Water Based), Raw Material Unloading	1.45	1.20E-03	125	85	535	0.43
Color New Ink (Oil Based), Finished Product Unloading	1.45	4.70E-03	241	1032	535	39.48
Color New Ink (Oil Based), Raw Material Unloading	1.45	4.70E-03	241	378	535	14.46
Color New Ink (Water Based), Finished Product Unloading	1.45	7.30E-02	121	1146	535	341.84
Color New Ink (Water Based), Raw Material Unloading	1.45	7.30E-02	121	378	535	112.75

**Total**

(1) Total VOC Emission (lb/yr) = 12.46 \* Saturation Factor \* Vapor Pressure (psia) \* Vapor Molecular weight (lb/lb-mole) \* volume of Product loaded (Mgal/yr)/Temperature (°R)

Total VOC Emissions (tons/yr)
7.86E-04
3.89E-04
4.72E-03
2.15E-04
1.97E-02
7.23E-03
1.71E-01
5.64E-02
<b>0.26</b>

⇒ \*

## VOC Emission From Indoor Bulk Storage Tanks (Potential)

Company Name: Flint Ink North America Corporation  
 Address City IN Zip: 4910 West 78th Street  
 CP: 097-18854-00525  
 Reviewer: Angelique Oliger  
 Date: April 28, 2004

Tank Identification	VOC (lb/yr) <sup>1</sup>	VOC (tons/yr)
T-101	63.35	3.17E-02
T-102	0.42	2.10E-04
T-103	0.42	2.10E-04
T-104	0.06	3.00E-05
T-105	0.12	6.00E-05
T-106	0.06	3.00E-05
T-107	0.06	3.00E-05
T-803	0.21	1.05E-04
T-804	0.24	1.20E-04
T-805	0.24	1.20E-04
T-806	0.19	9.50E-05
T-821	0.04	2.00E-05
T-822	0.04	2.00E-05
T-823	0.04	2.00E-05
T-824	0.04	2.00E-05
BT-232	0.15	7.50E-05
BT-233	0.04	2.00E-05
BT-234	0.04	2.00E-05
BT-235	0.04	2.00E-05
BT-237	0.04	2.00E-05
ST-814	0.04	2.00E-05
<b>Total</b>	<b>65.88</b>	<b>0.033</b>

(1) TANKS 4.0 model used to calculate emissions. Tank throughput totals based on maximum potential increase in facility raw material and finished product inventory data

## PM/PM10 Emissions From Indoor Bulk Storage Tanks

Company Name: Flint Ink North America Corporation  
 Address City IN Zip: 4910 West 78th Street  
 CP: 097-18854-00525  
 Reviewer: Angelique Oligier  
 Date: April 28, 2004

## Baghouses - Potential Emissions

Quantity of Finished Product with Dry Material Added (tons/yr)	Percent Dry Material Added	Dry Material Added (tons/yr) <sup>1</sup>	PM/PM10 Emission Factor (lb/ton dry added material)*	<b>Uncontrolled PM/PM10 Emissions (tons/yr)<sup>2</sup></b>	Baghouse Control Efficiency	Total Controlled PM/PM10 Emissions (tons) <sup>3</sup>
44673	20%	8935	2	<b>8.93</b>	99.90%	0.009

\* AP-42, Chapter 6.7, Printing Ink, Table 6.7-1

(1) Dry Material Added (tons/yr) = finished product (tons/yr) \* % dry material

(2) Uncontrolled emissions (tons/yr) = dry material added (tons / yr) \* emissions factor (lb / ton) \* 1 ton / 2000 lb

(3) Controlled emissions (tons/yr) = uncontrolled emissions (tons/yr) \* (1-baghouse efficiency (%))

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
MM BTU/HR <100  
Small Industrial Boiler**

**Company Name:** Flint Ink North America Corporation  
**Address City IN Zip:** 4910 West 78th Street  
**Permit Number:** 097-18854-00525  
**Reviewer:** Angelique Oligier  
**Date:** April 28, 2004

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

2.1

18.4

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.02	0.07	0.01	0.92	0.05	0.77

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

## Summary of Plantwide Potential Emissions

Company Name: Flint Ink North America Corporation  
 Address City IN Zip: 4910 West 78th Street  
 CP: 097-18854-00525  
 Reviewer: Angelique Oligier  
 Date: April 28, 2004

Facility	Potential to Emit (tons/yr)					
	PM	PM10	SO2	NOx	CO	VOC
News Ink Production						2.06
Transfer Operations						0.26
Tanks						0.03
Baghouses	8.93	8.93				
NG boiler	0.02	0.07	0.01	0.92	0.77	0.05
<b>Total</b>	<b>8.95</b>	<b>9.00</b>	<b>0.01</b>	<b>0.92</b>	<b>0.77</b>	<b>2.41</b>