INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant

DATE: March 30, 2005

RE: MPR Corporation d.b.a. Fabric Services / 039-20931-00630

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER-AM.dot 1/10/05

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

March 30, 2005

Mr. John Wuori
MPR Corporation d.b.a. Fabric Services
103 Hinsdale Farms Road
Bristol, IN 46507

Re: Exempt Construction and Operation Status,
039-20931-00630

Dear Mr. Wuori:

The application from MPR Corporation d.b.a. Fabric Services received on March 9, 2005, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following stationary transportation seating and trim manufacturing source, to be located at 103 Hinsdale Farms Road, Bristol, Indiana 46507 is classified as exempt from air pollution permit requirements:

(a) one (1) natural-gas fired flame laminator, constructed in February 2000, rated at 0.14 MMBtu/hr, for backing of vinyl and/or fabric with pre-manufactured polyurethane/polyether foam, with a maximum capacity of 65 pounds of foam per hour, with emissions controlled by one (1) natural gas-fired thermal oxidizer, rated at 3.8 MMBtu/hr, with a volatile organic compound destruction efficiency of 90% based on a oxidizing zone minimum temperature of 1300°F and a flow rate of 3405 acfm, exhausting to Stack 1.

(b) one (1) natural-gas fired hot roll coater, constructed in December 2004, rated at 0.085 MMBtu/hr, for backing of vinyl and/or fabric with pre-manufactured polyether foam using adhesive, with a maximum capacity of 63.4 pounds of adhesive per hour, exhausting to Stack 2.

(c) two (2) natural gas-fired space heaters, constructed in February 2000, each rated at 0.58 MMBtu/hr;

(d) one (1) natural gas-fired space heater, constructed in October 2004, rated at 0.58 MMBtu/hr;

The following conditions shall be applicable:

(a) 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:

(1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) in a six (6) hour period 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.

(b) Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

(c) Any change or modification that would increase the potential to emit of Volatile Organic Compounds (VOCs) or a combination of hazardous air pollutants (HAPs) to 25 tons per year or greater, or that of individual HAP to 10 tons per year or greater, shall require prior approval of IDEM, Office of Air Quality

This exemption is the first air approval issued to this source.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. If you have any questions on this matter, please contact Nathan C. Bell, OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204, at 317-234-3350 or at 1-800-451-6027 (ext 43350).

Sincerely,

Origin signed by

Nysa L. James, Section Chief
Permits Branch
Office of Air Quality

NCB

cc: File - Elkhart County
Elkhart County Health Department
IDEM Northern Regional Office
Air Compliance - Paul Karkiewicz
Permit Tracking
Compliance Data Section
Administrative and Development

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name:	**MPR Corporation d.b.a. Fabric Services**
Source Location:	**103 Hinsdale Farms Road, Bristol, IN 46507**
County:	**Elkhart**
SIC Code:	**2396 (Manufacturing of Automotive Trimmings, Apparel Findings, and Related Products)**
Application No.:	**039-20931-00630**
Reviewer:	**Nathan C. Bell**

On March 9, 2005, the Office of Air Quality (OAQ) received an application from MPR Corporation d.b.a. Fabric Services relating to the operation of a stationary transportation seating and trim manufacturing source

Unpermitted Emission Units and Pollution Control Equipment

The application includes information relating to the construction and operation of the following:

(a) one (1) natural-gas fired flame laminator, constructed in February 2000, rated at 0.14 MMBtu/hr, for backing of vinyl and/or fabric with pre-manufactured polyurethane/polyether foam, with a maximum capacity of 65 pounds of foam per hour, with emissions controlled by one (1) natural gas-fired thermal oxidizer, rated at 3.8 MMBtu/hr, with a volatile organic compound destruction efficiency of 90% based on a oxidizing zone minimum temperature of 1300°F and a flow rate of 3405 acfm, exhausting to Stack 1.

(b) one (1) natural-gas fired hot roll coater, constructed in December 2004, rated at 0.085 MMBtu/hr, for backing of vinyl and/or fabric with pre-manufactured polyether foam using adhesive, with a maximum capacity of 63.4 pounds of adhesive per hour, exhausting to Stack 2.

(c) two (2) natural gas-fired space heaters, constructed in February 2000, each rated at 0.58 MMBtu/hr;

(d) one (1) natural gas-fired space heater, constructed in October 2004, rated at 0.58 MMBtu/hr;

Existing Approvals

No previous air approvals have been issued to this source.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (^{o}F)
1	natural gas-fired flame laminator, natural gas-fired thermal oxidizer	46	1.7	3405	1350
2	natural gas-fired hot roll coater	36	0.67	353	250
3	natural gas-fired space heater	35	0.67	46	480
4	natural gas-fired space heater	35	0.67	46	480
5	natural gas-fired space heater	35	0.67	46	480

Recommendation

The staff recommends to the Commissioner that the application be approved as an exemption. 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 application for the purposes of this review was received on March 9, 2005.

Emission Calculations

See Appendix A of this TSD for detailed emissions calculations (Appendix A, pages 1 through 4).

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit (PTE) 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.”

The following table reflects the existing source potential to emit. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential To Emit (tons/year)
PM	0.29
PM-10	0.44
SO_2	0.02
NO_x	2.53
VOC	9.67
CO	6.33

HAP's	Potential To Emit (tons/year)
MDI	7.25
hydrogen chloride	3.47
2,4-TDI	0.67
hydrogen cyanide	1.17
Benzene	negligible
Dichlorobenzene	negligible
Formaldehyde	negligible
n-Hexane	0.05
Toluene	negligible
Lead	negligible
Cadmium	negligible
Chromium	negligible
Manganese	negligible
Nickel	negligible
TOTAL HAPs	**12.61**

(a) The PTE (as defined in 326 IAC 2-1.1-1(16)) of regulated criteria pollutants are less than the levels listed in 326 IAC 2-1.1-3(e)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3.

(b) The PTE (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM10	Attainment or Unclassifiable
SO_2	Attainment
NO_2	Attainment or Unclassifiable
1-Hour Ozone	Maintenance Attainment
8-Hour Ozone	Basic Nonattainment
CO	Attainment or Unclassifiable
Lead	Attainment or 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 standard. Elkhart County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

(b) Elkhart County has been classified as attainment or unclassifiable for all the other regulated criteria pollutants. 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 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

New Source PSD and Emission Offset Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	0.56
PM-10	0.70
SO_2	0.02
NO_x	4.85
VOC	7.62
CO	2.54
Worst Single HAP	7.25
Combination HAPs	10.95

(a) This new source is not a major PSD stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or greater 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.

(b) This new source is not a Emission Offset major stationary source because no regulated nonattainment pollutant is emitted at a rate of 100 tons per year or greater. Therefore, pursuant to 326 IAC 2-3, the Emission Offset 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 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.

This status is based on the potential to emit calculations of the source (see Appendix A).

Federal Rule Applicability

(a) This source is not subject to the requirements of 326 IAC 12 or 40 CFR 60, Subpart DDD (60.560 through 60.566), Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry, because this source does not manufacture polypropylene, polyethylene, polystyrene, or poly (ethylene terephthalate) as defined in 40 CFR 60.561. This source performs the backing of vinyl and/or fabric with pre-manufactured polyurethane/polyether foam.

(b) This source is not subject to the requirements of 326 IAC 12 or 40 CFR 60, Subpart FFF (60.580 through 60.585), Standards of Performance for Flexible Vinyl and Urethane Coating and Printing, because this source does not contain any rotogravure printing lines

used to print or coat flexible vinyl or urethane products. This source performs the backing of vinyl and/or fabric with pre-manufactured polyurethane/polyether foam

(c) This source is not subject to the requirements of 326 IAC 12 or 40 CFR 60, Subpart HHH (60.600 through 60.604), Standards of Performance for Synthetic Fiber Production Facilities, because this source does not manufacture solvent-spun synthetic fiber. This source performs the backing of vinyl and/or fabric with pre-manufactured polyurethane/polyether foam.

(d) This source is not subject to the requirements of 326 IAC 12 or 40 CFR 60, Subpart III (60.610 through 60.617), Standards of Performance for Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes, because this source does not produce any of the compounds or chemicals listed in 40 CFR 60.617 (as a product, co-product, by-product, or intermediate) for sale as a final product as that chemical, or for use in the production of other chemicals or compounds.

(e) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this source.

(f) This source is not subject to the requirements of 40 CFR 63 Subpart YY (63.1100 through 63.1114) - NESHAPs for Source Categories: Generic Maximum Achievable Control Technology Standards (326 IAC 20-44-1), because this source is not one of the source categories or affected sources specified in 40 CFR 63.1103(a) through (h). This source performs surface coating of vinyl and/or fabric with pre-manufactured polyurethane/polyether foam.

(g) This source is not subject to the requirements of the 40 CFR 63, Subpart III (40 CFR Part 63.1290 - 63.1309) - NESHAPs: Flexible Polyurethane Foam Production (326 IAC 20-22-1), because the source does not produce flexible polyurethane or rebond foam as defined by 63.1292. This source performs surface coating of vinyl and/or fabric with pre-manufactured polyurethane/polyether foam.

(h) This source is not subject to the requirements of 40 CFR 63, Subpart PPP (60.1420 through 60.1439), NESHAP for Polyether Polyols Production (326 IAC 20-59-1), because this source does not manufacture a polyether polyol.

(i) This source is not subject to the requirements of 40 CFR 63 Subpart OOOO (63.4280 through 63.4371) - NESHAPs: Printing, Coating, and Dyeing of Fabrics and Other Textiles, because this source is not a major source of HAPs.

(j) This source is not subject to the requirements of 40 CFR 63, Subpart DDDDD, (63.7480 through 63.7575), NESHAPs for Industrial, Commercial, and Institutional Boilers and Process Heaters, because the source is not a major source of HAPs.

(k) This source is not subject to the requirements of 40 CFR 63 Subpart MMMMM (63.8780 through 63.8830) - NESHAPs: Flexible Polyurethane Foam Fabrication Operation (326 IAC 20-66-1), because this source is not a major source of HAPs.

(l) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in the permit for this source.

State Rule Applicability - Entire Source

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

This source was constructed after the applicability date of August 7, 1977, however, it is not one of the 28 listed source categories defined in 326 IAC 2-2-1(y)(1), no major modifications were done to this source, and the uncontrolled potential to emit of all attainment regulated pollutants is less than 250 tons per year. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

326 IAC 2-3 (Emission Offset)

The requirements of 326 IAC 2-3 (Emission Offset) apply to major sources or major modifications constructed in an area designated as non-attainment. The uncontrolled potential to emit of VOC and NOx are each less than 100 tons per year. Therefore, the requirements of 326 IAC 2-3 (Emission Offset) are not applicable.

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

The requirements of 326 IAC 2-4.1 are not applicable to this source, since the potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year.

326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), because it is located in Elkhart 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 forty percent (40%) in 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) in a six (6) hour period 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 6-4 (Fugitive Dust Emissions Limitations)

Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

State Rule Applicability - Individual Facilities

326 IAC 8-1-6 (VOC rules: General Reduction Requirements for New Facilities)

The requirements of 326 IAC 8-1-6 are not applicable, since each of the emission units at this source does not have the potential to emit greater than twenty-five (25) tons of VOCs per year.

State Rule Applicability - Surface Coating Operations

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

Pursuant to 326 IAC 6-3-1(b)(14), each of the surface coating activities is exempt from the requirements of 326 IAC 6-3, because the potential particulate emissions are less than five hundred fifty-one thousandths (0.551) pound per hour.

State Rule Applicability – Natural Gas Combustion Sources

326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)

The natural gas-fired space heaters are not subject to 326 IAC 6-2 as they are not sources of indirect heating.

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

Pursuant to 326 IAC 6-3-1(b)(14), the natural gas-fired laminator, hot roll coater, thermal oxidizer, and space heaters are each exempt from the requirements of 326 IAC 6-3, because they each have a potential particulate emissions less than five hundred fifty-one thousandths (0.551) pound per hour.

326 IAC 7-1 (Sulfur dioxide emission limitations: applicability)

The natural gas-fired laminator, hot roll coater, thermal oxidizer, and space heaters are each not subject to the requirements of 326 IAC 7-1, because the potential and the actual emissions are less than twenty-five (25) tons per year and ten (10) pounds per hour respectively.

Conclusion

The operation of these facilities shall be subject to the conditions of the attached exemption, No 039-20931-00630.

Appendix A: Emissions Calculations
VOC, Particulate, HAPs
Emission Summary

Company Name: MPR Corporation d.b.a. Fabric Services
Address City IN Zip: 103 Hinsdale Farms Road, Bristol, IN 46507
Permit Number: 039-20931
Plt ID: 039-00630
Reviewer: Nathan C. Bell
Date: March 15, 2005

	Uncontrolled Potential Emissions (tons/year)				
		Emissions Generating Activity			
Category	Pollutant	Roll Coating	Natural Gas Combustion	Flame Laminator	**TOTAL**
Criteria Pollutants	PM	0	0.05	0.25	0.29
	PM10	0	0.19	0.25	0.44
	SO2		0.02		0.02
	NOx		2.53		2.53
	VOC	7.25	0.14	2.28	9.67
	CO		2.12	4.20	6.33
Hazardous Air Pollutants	MDI	7.25			7.25
	hydrogen chloride			3.47	3.47
	2,4-TDI			0.67	0.67
	hydrogen cyanide			1.17	1.17
	Benzene		5.3E-05		5.3E-05
	Dichlorobenzene		3.0E-05		3.0E-05
	Formaldehyde		1.9E-03		1.9E-03
	n-Hexane		0.05		0.05
	Toluene		8.6E-05		8.6E-05
	Lead		1.3E-05		1.3E-05
	Cadmium		2.8E-05		2.8E-05
	Chromium		3.5E-05		3.5E-05
	Manganese		9.6E-06		9.6E-06
	Nickel		5.3E-05		5.3E-05
	Totals	**7.25**	**0.05**	**5.31**	**12.61**
				Worse Case HAP	**7.25**

Total emissions based on rated capacity at 8,760 hours/year.

	Controlled Potential Emissions (tons/year)				
		Emissions Generating Activity			
Category	Pollutant	Roll Coating	Natural Gas Combustion	Flame Laminator	**TOTAL**
Criteria Pollutants	PM	0	0.05	0.51	0.56
	PM10	0	0.19	0.51	0.70
	SO2		0.02		0.02
	NOx		2.53	2.33	4.85
	VOC	7.25	0.14	0.23	7.62
	CO		2.12	0.42	2.54
Hazardous Air Pollutants	MDI	7.25			7.25
	hydrogen chloride			3.47	3.47
	2,4-TDI			0.07	0.07
	hydrogen cyanide			0.12	0.12
	Benzene		5.3E-05		5.3E-05
	Dichlorobenzene		3.0E-05		3.0E-05
	Formaldehyde		1.9E-03		1.9E-03
	n-Hexane		0.05		0.05
	Toluene		8.6E-05		8.6E-05
	Lead		1.3E-05		1.3E-05
	Cadmium		2.8E-05		2.8E-05
	Chromium		3.5E-05		3.5E-05
	Manganese		9.6E-06		9.6E-06
	Nickel		5.3E-05		5.3E-05
	Totals	**7.25**	**0.05**	**3.65**	**10.95**
				Worse Case HAP	**7.25**

Total emissions based on rated capacity at 8,760 hours/year.

Appendix A: Emissions Calculations
VOCs, Particulate, HAPs
Surface Coatings

Company Name: **MPR Corporation d.b.a. Fabric Services**
Address City IN Zip: **103 Hinsdale Farms Road, Bristol, IN 46507**
Permit Number: **039-20931**
Plt ID: **039-00630**
Reviewer: **Nathan C. Bell**
Date: **March 15, 2005**

Volatile Organic Comounds (VOC) and Particulate Matter (PM)

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water + Non-VOCs	Weight % Solids	Weight % VOCs	Volume % Water + Non-VOCs	Volume % Solids	Volume % VOCs	Maximum Usage (gal/day)*	Maximum Usage (lbs/hour)	Pounds VOC per gallon of coating less water and non-VOCs	Pounds VOC per gallon of coating	Potential VOC (lbs/hr)	Potential VOC (lbs/day)	Potential VOC (tons/year)	Particulate Matter Potential (lb/hr)	Particulate Matter Potential (tons/yr)	lb VOC per gal solids	Transfer Efficiency
Pur-Fect Lok Adhesive	8.80	2.30%	0.0%	97.7%	2.6%	0.0%	97.7%	2.3%	173.01	63.44	0.23	0.23	1.66	39.74	7.25	0	0	0.24	100%

*Maximum Usage provided by source = Potential Paint Usage (lbs/year) / (Denisty (lbs/gal) * 365 days/year)

Totals	**1.66**	**39.74**	**7.25**	**0**	**0**

METHODOLOGY

Maximum Usage (lbs/hr) = Maximum Usage (gal/day) * Density (lb/gal) / (24 hour/day)
Pounds of VOC per Gallon Coating less Water and non-VOCs = (Density (lb/gal) * Weight % VOCs) / (1-Volume % water and non-VOCs)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % VOCs)
Potential VOC Pounds per Hour = Maximum Usage (lbs/hr) * Weight % VOCs
Potential VOC Pounds per Day = Potential VOC (lbs/hr) * (24 hours/day)
Potential VOC Tons per Year = Potential VOC (lbs/day) * (365 days/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = Density (lbs/gal) * Maximum Usage (gal/day) * (Weight % Solids) * (1-Transfer efficiency) *(365 days/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % VOCs) / (Volume % solids)

Hazardous Air Pollutants (HAPs)

Material	Density (Lb/Gal)	Maximum Usage (gal/day)	Weight % MDI	MDI Emissions (ton/yr)
Pur-Fect Lok Adhesive	8.80	173.0	2.6%	7.25

TOTAL HAPs 7.25 ton/yr

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Maximum Usage (gal/day) * Weight % HAP * 365 days/yr * 1 ton/2000 lbs
MDI = Methylenebis(phenylisocyanate) (CAS# 101-68-8)

Appendix A: Emissions Calculations
VOCs, Particulate, HAPs
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: MPR Corporation d.b.a. Fabric Services
Address City IN Zip: 103 Hinsdale Farms Road, Bristol, IN 46507
Permit Number: 039-20931
Plt ID: 039-00630
Reviewer: Nathan C. Bell
Date: March 15, 2005

				Pollutant	PM*	PM10*	SO2	NOx**	VOC	CO
				Emission Factor (lb/MMCF)	1.9	7.6	0.6	100	5.5	84.0
					Potential Emission tons/yr					
Emission Unit	Number of Units	Unit Heat Input Capacity MMBtu/hr	Combined Total Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	PM*	PM10*	SO2	NOx**	VOC	CO
Flame Laminator	1	0.140	0.140	1.23	0.001	0.005	0.000	0.061	0.003	0.052
Hot Roller Coater	1	0.085	0.085	0.74	0.001	0.003	0.000	0.037	0.002	0.031
Space Heater North	1	0.580	0.580	5.08	0.005	0.019	0.002	0.254	0.014	0.213
Space Heater East	1	0.580	0.580	5.08	0.005	0.019	0.002	0.254	0.014	0.213
Space Heater West	1	0.580	0.580	5.08	0.005	0.019	0.002	0.254	0.014	0.213
Thermal Oxidizer	1	3.80	3.800	33.29	3.2E-02	0.126	0.010	1.664	0.092	1.398
Totals	**6**		**5.8**		**0.048**	**0.192**	**0.015**	**2.525**	**0.139**	**2.121**

Pollutant	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Emission Factor (lb/MMCF)	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
	Potential Emission tons/yr									
Emission Unit	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Flame Laminator	1.3E-06	7.4E-07	4.6E-05	0.001	2.1E-06	3.1E-07	6.7E-07	8.6E-07	2.3E-07	1.3E-06
Hot Roller Coater	7.8E-07	4.5E-07	2.8E-05	0.001	1.3E-06	1.9E-07	4.1E-07	5.2E-07	1.4E-07	7.8E-07
Space Heater North	5.3E-06	3.0E-06	1.9E-04	0.005	8.6E-06	1.3E-06	2.8E-06	3.6E-06	9.7E-07	5.3E-06
Space Heater East	5.3E-06	3.0E-06	1.9E-04	0.005	8.6E-06	1.3E-06	2.8E-06	3.6E-06	9.7E-07	5.3E-06
Space Heater West	5.3E-06	3.0E-06	1.9E-04	0.005	8.6E-06	1.3E-06	2.8E-06	3.6E-06	9.7E-07	5.3E-06
Thermal Oxidizer	3.5E-05	2.0E-05	1.2E-03	0.030	5.7E-05	8.3E-06	1.8E-05	2.3E-05	6.3E-06	3.5E-05
Totals	**5.3E-05**	**3.0E-05**	**1.9E-03**	**0.045**	**8.6E-05**	**1.3E-05**	**2.8E-05**	**3.5E-05**	**9.6E-06**	**5.3E-05**

*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
The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology
Potential Throughput (MMCF) = Combined Total Heat Input Capacity (MMBtu/hr) * 8,760 hrs/yr * 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) * Emission Factor (lb/MMCF) / 2,000 lb/ton
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)
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu, MMCF = 1,000,000 Cubic Feet of Gas

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um
SO2 = Sulfur Dioxide
NOx = Nitrous Oxides
VOC - Volatile Organic Compounds
CO = Carbon Monoxide
DCB = Dichlorobenzene
Pb = Lead
Cd = Cadmium
Cr = Chromium
Mn = Manganese
Ni = Nickel

Appendix A: Emissions Calculations
VOCs, Particulate, HAPs
Flame Laminator

Company Name: **MPR Corporation d.b.a. Fabric Services**
Address City IN Zip: **103 Hinsdale Farms Road, Bristol, IN 46507**
Permit Number: **039-20931**
Plt ID: **039-00630**
Reviewer: **Nathan C. Bell**
Date: **March 15, 2005**

Emissions of particulate matter (PM/PM10), hydrogen chloride (HCl), carbon monoxide (CO), toluene diisocyanate (TDI) isomers at a ratio of 60.13% for 2,4-TDI and 39.87% for 2,6-TDI, and hydrogen cyanide (HCN) from the foam flame laminator was estimated by the source using emission data from the manufacturer (McBride Machine) and from stack test emission data from a similar source operating at a similar capacity (Interstate Foam Processors, Inc., Knoxville, TN).

In the flame lamination process, foam is scorched to adhere it to various substrates. This process releases particulates and HAP. EPA have identified HCN, TDI, and HCl as HAP emitted as a result of flame lamination. These HAP are a product of the combustion of unreacted diisocyanates from the foam production process (HCN and TDI) and the chlorinated fire retardant additives that are present in some polyurethane foams (HCl).

Potential Emissions Before Controls (provided by source)

Compound	PTE (lbs/min)	PTE (lbs/hr)	PTE (grams/min)	PTE (tons/year)	VOC PTE (tons/year)
Data from McBride Machine Study					
PM/PM10	-	0.056	-	0.25	
HCl	-	0.038	-	0.17	
Data from Interstate Foam Processors, Inc., Knoxville, TN Study					
PM/PM10		1.171		5.13	
HCl (Estimated)*		0.792		3.47	
Maximum between McBride and Interstate Studies					
PM/PM10				5.13	
HCl				3.47	
Data from Interstate Foam Processors, Inc., Knoxville, TN					
CO	0.016	-	-	4.20	
2,4-TDI	-	0.1519	-	0.67	0.67
2,6-TDI	-	0.1007	-	0.44	0.44
HCN	-	-	2.028	1.17	1.17
			Total VOC PTE (tons/yr)		2.28

Potential Emissions After Controls

Thermal Oxidizer Destruction Efficiency = 90.0%

Compound	PTE (tons/year)	VOC PTE (tons/year)	% Nitrogen in Compound	Equivalent N Produced (tons/yr)	Equivalent NOx Produced (tons/yr)
PM/PM10**	0.51				
CO***	0.42				
2,4-TDI****	0.07	0.07	16.1%	0.096	0.32
2,6-TDI****	0.04	0.04	16.1%	0.064	0.21
HCN****	0.12	0.12	51.8%	0.548	1.80
Total VOC PTE (tons/yr)		0.23	Total NOx Produced (tons/yr)		2.33

Methodology
Potential Emissions After Controls = PTE Before Controls (tons/yr) * (1 - control efficiency)
Total emissions based on rated capacity at 8,760 hours/year.
*Emission of HCl for the Interstate Foam Processors study was estimated using the ratio of PM generated in both studies
HCl for Interstate study = (HCl for McBride study) * (PM/PM10 for Interstate)/(PM/PM10 for McBride)
**Thermal oxidizer destroys 90% of opacity. Assume thermal oxidizer destroys 90% of particulate matter (PM/PM10)
***Assume thermal oxidizer oxidizes carbon monoxide to carbon dioxide at 90% efficiency
****Assume themal oxidizer oxidizes HCN and TDI isomers at 90% efficiency with formation of NOx in the form of NO2

Acronyms
HCl = hydrogen chloride (from VOC combustion) (HAP, non-VOC)
CO = carbon monoxide (from VOC combustion) (non-HAP, non-VOC)
2,4-TDI = 2,4-toluene diisocyanate (CAS# 584-84-9) (HAP, VOC)
2,6-TDI = 2,6-toluene diisocyanate (CAS# 91-08-7) (non-HAP, VOC)
HCN = hydrogen cyanide (from VOC combustion) (HAP, VOC)