217/782-2113

"REVISED"
TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
and
TITLE I PERMIT[1]

PERMITTEE

Crownline Boats, Inc.
Attn: James T. Claxton
11884 Country Club Road
West Frankfort, IL 62896

Application No.: 96030137 I.D. No.: 055070AAU
Source Location: 11884 Country Club Road, West Frankfort, Franklin
Operation of: Fiberglass Boat Manufacturing Equipment
Date Received: March 7, 1996
Date Issued: November 13, 2003 Expiration Date: November 13, 2008
Responsible Official: Kevin Riem, President and CEO

This permit is hereby granted to the above-designated Permittee to operate a fiberglass boat manufacturing operations, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

Revision Date Received: April 18, 2007
Revision Date Issued: September 25, 2007
Purpose of Revision: Administrative Amendment

This administrative amendment consists of changing the name of the responsible official to Kevin Riem. Because the changes in the permit were only administrative, no formal public notice was issued.

This document only contains those portions of the entire CAAPP permit that have been revised as a result of this permitting action. If a conflict exists between this document and previous versions of the CAAPP permit, this document supersedes those terms and conditions of the permit for which the conflict exists. The previous permit issued November 13, 2003 is incorporated herein by reference.

Please attach a copy of this amendment and the following revised pages to the front of the most recently issued entire permit.

If you have any questions concerning this permit, please contact Sunil Suthar at 217/782-2113.

Edwin C. Bakowski, P.E.
Acting Manager, Permit Section
Division of Air Pollution Control

ECB:SIS:jws

cc: Illinois EPA, FOS Region 3
CES
Lotus Notes

1 This permit may contain terms and conditions which address the applicability, and compliance if determined applicable, of Title I of the CAA and regulations promulgated thereunder, including 40 CFR 52.21 – federal PSD and 35 IAC Part 203 – Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within this permit.

2 Except as provided in Condition 8.7 of this permit.

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1.0 SOURCE IDENTIFICATION

1.1 Source

Crownline Boats, Inc.
11884 Country Club Road
West Frankfort, Illinois 62896
618/937-6426

I.D. No.: 055070AAU
Standard Industrial Classification: 3732

1.2 Owner/Parent Company

Crownline Boats, Inc.
11884 Country Club Road
West Frankfort, Illinois 62896

1.3 Operator

Crownline Boats, Inc.
11884 Country Club Road
West Frankfort, Illinois 62896

James T. Claxton
618/937-6426

1.4 General Source Description

Crownline Boats, Inc. is located at 11884 Country Club Road, West Frankfort, Illinois. The source manufactures fiberglass boats.

2.0 LIST OF ABBREVIATIONS/ACRONYMS USED IN THIS PERMIT

Act	Illinois Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollutant Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711
BAT	Best Available Technology
Btu	British thermal unit
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	Carbon Monoxide
ERMS	Emissions Reduction Market System
ft^3	Cubic Feet
gal	Gallon
HAP	Hazardous Air Pollutant
hr	hour
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
ILCS	Illinois Compiled Statutes
Illinois EPA	Illinois Environmental Protection Agency
kg	Kilograms
kW	kilowatts
LAER	Lowest Achievable Emission Rate
lb	pound
MACT	Maximum Achievable Control Technology
Mg	Megagrams
mmBtu	Million British thermal units
mmHg	Millimeters of Mercury
mmscf	Million standard cubic feet
mo	month
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM_{10}	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
ppm	parts per million
PSD	Prevention of Significant Deterioration
RMP	Risk Management Plan
SO_2	Sulfur Dioxide
T1	Title I – identifies Title I conditions that have been carried over from an existing permit
T1N	Title I New – identifies Title I conditions that are being established in this permit

T1R	Title I Revised – identifies Title I conditions that have been carried over from an existing permit and subsequently revised in this permit
USEPA	United States Environmental Protection Agency
VOM	Volatile Organic Material

3.0 INSIGNIFICANT ACTIVITIES

3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a)(1) and 201.211, as follows:

Foam Installation
Natural Gas Combustion Units with a Rated Capacity Less Than 10 mmBtu/Hr

3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a)(2) or (a)(3), as follows:

Application of Filler
Welding
Application of Wood Adhesives
Solvent Cleaning Using Acetone

3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a)(4) through (18), as follows:

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

Equipment used for the melting or application of less than 50,000 lbs/year of wax to which no organic solvent has been added [35 IAC 201.210(a)(7)].

3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b).

3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.2.2), the

Permittee shall comply with the following requirements, as applicable:

3.2.1 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 215.182, 218.182, or 219.182.

3.2.2 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the emission unit's process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.

3.2.3 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 215.301, 218.301, or 219.301, which requires that organic material emissions not exceed 8.0 pounds per hour or do not qualify as photochemically reactive material as defined in 35 IAC 211.4690. The Permittee shall obtain an adjusted standard in regards to compliance with 35 IAC 215.301 or establish compliance with 35 IAC 215.301 (Condition 7.1.3(c)(i)) by December 31, 2004.

3.3 Addition of Insignificant Activities

3.3.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).

3.3.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type addressed by 35 IAC 201.210(a) and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12)(b) of the Act.

3.3.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 01: Gelcoat and Lamination Operations			
Mold Preparation	Use of Stripping Solvents for Mold Cleaning	July, 1993	None
4 Gelcoat Application Booths	Application of Gelcoat to Boat Molds	July, 1993	Particulate Filter
24 Laminating Stations	Lamination of Boat Hulls, Decks, and Parts Using Fiberglass and Polyester Resin	July, 1993	Panel Filters And Non-Atomized Spray Applicators for Both PM and VOM Control
Unit 02: Final Assembly Area			
Floor Lacquer Application	Application of Lacquer to Floor That Seals the Buoyancy Foam	July, 1993	None
Carpet Adhesive Application	Application of Adhesives to Stick Carpet to Boat Decks	July, 1993	None
Caulk Application	Application of Caulk to Join Deck and Hull	July, 1993	None
Unit 03: Woodworking Area Routers, Circular Saws, etc.	Equipment for Cutting Wood	July, 1993	Cyclone Followed by Bag Filter
Unit 04: Resin Storage	6,000 Gallon Tanks Used to Store Fiberglass Resin	July, 1993	Submerged Loading

5.0 OVERALL SOURCE CONDITIONS

5.1 Source Description

5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source of VOM and HAP emissions

5.2 Applicable Regulations

5.2.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions) of this permit.

5.2.2 In addition, emission units at this source are subject to the following regulations of general applicability:

a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.

   Compliance with this requirement is considered to be assured by the inherent nature of operations at this source, as demonstrated by historical operation.

b. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) and 212.124.

5.2.3 Ozone Depleting Substances

The Permittee shall comply with the standards for recycling and emissions reduction of ozone depleting substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

5.2.4 Risk Management Plan

Should this stationary source, as defined in 40 CFR Section 68.3, become subject to the Accidental Release Prevention regulations in 40 CFR Part 68, then the owner or operator shall submit [40 CFR 68.215(a)(2)(i) and (ii)]:

a. A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR 68.10(a); or

b. A certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of the Risk Management Plan (RMP), as part of the annual compliance certification required by 40 CFR Part 70 or 71.

5.2.5 a. Should this stationary source become subject to a regulation under 40 CFR Parts 60, 61, or 63, or 35 IAC after the date issued of this permit, then the owner or operator shall, in accordance with the applicable regulation(s), comply with the applicable requirements by the date(s) specified and shall certify compliance with the applicable requirements of such regulation(s) as part of the annual compliance certification, as required by 40 CFR Part 70 or 71.

b. No later than upon the submittal for renewal of this permit, the owner or operator shall submit, as part of an application, the necessary information to address either the non-applicability of, or demonstrate compliance with all applicable requirements of any potentially applicable regulation which was promulgated after the date issued of this permit.

5.2.6 Episode Action Plan

a. If the source is required to have an episode action plan pursuant to 35 IAC 244.142, the Permittee shall maintain at the source and have on file with the Illinois EPA a written episode action plan (plan) for reducing the levels of emissions during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The plan shall contain the information specified in 35 IAC 244.144.

b. The Permittee shall immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared.

c. If a change occurs at the source which requires a revision of the plan (e.g., operational change, change in the source contact person), a copy of the revised plan shall be submitted to the Illinois EPA for review within 30 days of the change. Such plans shall be further revised if disapproved by the Illinois EPA.

d. For sources required to have a plan pursuant to 35 IAC 244.142, a copy of the original plan and any subsequent revisions shall be sent to:

i. Illinois EPA, Compliance Section; and

ii. For sources located in Cook County and outside of the city of Chicago: Cook County Department of Environmental Control; or

iii. For sources located within the city of Chicago: Chicago Department of Environmental Control.

5.3 Non-Applicability of Regulations of Concern

None

5.4 Source-Wide Operational and Production Limits and Work Practices

In addition to the source-wide requirements in the Standard Permit Conditions in Section 9, the Permittee shall fulfill the following source-wide operational and production limitations and/or work practice requirements:

None

5.5 Source-Wide Emission Limitations

5.5.1 Permitted Emissions for Fees

The annual emissions from the source, not considering insignificant activities as addressed by Section 3.0 of this permit, shall not exceed the following limitations. The overall source emissions shall be determined by adding emissions from all emission units. Compliance with these limits shall be determined on a calendar year basis. These limitations (Condition 5.5.1) are set for the purpose of establishing fees and are not federally enforceable.

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Volatile Organic Material (VOM)	249.0
Sulfur Dioxide (SO_2)	0.10
Particulate Matter (PM)	27.05
Nitrogen Oxides (NO_x)	23.32
HAP, not included in VOM or PM	-----
Total	299.47

5.5.2 Emissions of Hazardous Air Pollutants

Source-wide emission limitations for HAPs as listed in Section 112(b) of the CAA are not set. This source is considered to be a major source of HAPs.

5.5.3 Other Source-Wide Emission Limitations

The annual emissions from the source shall not exceed the following limitations:

Pollutant	Emissions (Tons/Year)	Underlying Rules
VOM	249.0	40 CFR 52.21

The above limitations contain revisions to previously issued Permit 93050051. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, this limit has been revised to allow a greater usage of resin per year and to establish a source-wide annual limit [T1R].

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

5.6 General Recordkeeping Requirements

5.6.1 Emission Records

The Permittee shall maintain records of the following items for the source to demonstrate compliance with Condition 5.5.1, pursuant to Section 39.5(7)(b) of the Act:

Total annual emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions) of this permit.

5.6.2 General Records for VOM emissions

The Permittee shall maintain records of the following items to demonstrate compliance with Condition 5.5.3:

The source wide emissions of VOM as calculated by the compliance procedures in Section 7 of this permit, tons/mo and tons/yr (running 12 month total).

5.6.5 Records for Operating Scenarios

N/A

5.6.6 Retention and Availability of Records

a. All records and logs required by this permit shall be retained for at least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request.

b. The Permittee shall retrieve and print, on paper during normal source office hours, any records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a source inspection.

5.7 General Reporting Requirements

5.7.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the source with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

5.7.2 Annual Emissions Report

The annual emissions report required pursuant to Condition 9.7 shall contain emissions information for the previous calendar year.

5.7.3 Annual Reporting of VOM Emissions

The Permittee shall submit an annual report to the Illinois EPA, Compliance Section, on VOM emissions from the source, including the following information, so as to demonstrate whether the source is in compliance with Condition 5.5.3. This report shall be submitted with the Annual Emissions Report (Condition 9.7).

The annual emissions of VOM from the source for each month of the previous calendar year (e.g., for the month of January, the emissions from February, of the preceding calendar year through January, for the month of February, the emissions from March of the preceding calendar year through February, 12 months in all).

5.8 General Operational Flexibility/Anticipated Operating Scenarios

N/A

5.9 General Compliance Procedures

5.9.1 General Procedures for Calculating Emissions

Compliance with the source-wide emission limits specified in Condition 5.5 shall be based on the recordkeeping and reporting requirements of Conditions 5.6 and 5.7, and Compliance Procedures in Section 7 (Unit Specific Conditions) of this permit.

6.0 NOT APPLICABLE TO THIS PERMIT

7.0 UNIT SPECIFIC CONDITIONS

7.1 Gelcoat and Lamination Operations
Controls: Particulate Filters, Non-Atomized Spray Applicators

7.1.1 Description

Boats are made from glass fiber reinforced plastic using the open mold process. In the gelcoat spray booths, a smooth-surfaced shell is formed by applying liquid gelcoat onto a hull or deck mold using air-atomized spray applicators ("spray guns") and then allowing the sprayed layer to cure in the mold. Before the gelcoat is applied, the mold is first cleaned and then treated to allow the finished hull or deck to release cleanly from the mold after the resin application step has been completed. In the lamination process, resin is applied to boat hull and deck molds to obtain the desired finished thickness called for by the boat model being built. This process consists of applying a mixture of chopped glass fibers and catalyzed liquid resin using non-atomized, "flow coat"-type, chopper guns to the interior surface of the cured gelcoat in the part (hull or deck) mold. Emissions of VOM also result from the usage of solvents to clean the resin application equipment.

7.1.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit(s)	Description	Date Constructed	Emission Control Equipment
Gelcoat and Lamination Operations:			
Mold Preparation	Use of Stripping Solvents for Mold Cleaning	July 1993	None
4 Gelcoat Application Booths	Application of Gelcoat to Boat Molds	July 1993	Panel Filters for PM Control
24 Laminating Stations	Lamination of Boat Hulls, Decks, and Parts Using Fiberglass and Polyester Resin	July 1993	Panel Filters and Non-Atomized Spray Applicators for Both PM and VOM Control

7.1.3 Applicability Provisions and Applicable Regulations

a. The “affected gelcoat and lamination operations” for the purpose of these unit-specific conditions, are

the boat manufacturing processes described in Conditions 7.1.1 and 7.1.2.

b. The affected gelcoat and lamination operations are subject to the emission limits and requirements identified in Section 5 of this Permit.

c. The affected gelcoat and lamination operations are subject to 35 IAC 215 Subpart K, Use of Organic Material, which provides that:

i. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission source, except as provided in Condition 7.1.3(c)(ii) (35 IAC 215.302) and the following exception: If no odor nuisance exists the limitation of 35 IAC 215 Subpart K shall apply only to photochemically reactive material [35 IAC 215.301].

ii. Pursuant to 35 IAC 215.302, emissions of organic material in excess of those permitted by Condition 7.1.3(c)(i) (35 IAC 215.301) are allowable if such emissions are controlled by one of the following methods:

A. Flame, thermal or catalytic incineration so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 percent of the hydrocarbons to carbon dioxide and water [35 IAC 215.302(a)]; or,

B. A vapor recovery system which adsorbs and/or condenses at least 85 percent of the total uncontrolled organic material that would otherwise be emitted to the atmosphere [35 IAC 215.302(b)]; or

C. Any other air pollution control equipment approved by the Illinois EPA and approved by the USEPA as a SIP revision capable of reducing by 85 percent or more the uncontrolled organic material that would be otherwise emitted to the atmosphere [35 IAC 215.302(c)].

Note: An emission source, for the purposes of 35 IAC 215 Subpart K, is the item onto which material is applied. In the case of boat manufacturing, it is the mold.

d. The affected gelcoat and lamination operations are subject to 35 IAC 212.321, which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified subsection (b) or (c) of 35 IAC 212.321 (see also Attachment 1) [35 IAC 212.321 (a)].

e. The affected gelcoat and lamination operations are subject to 40 CFR 63, Subpart VVVV, National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing. Applicability (40 CFR 63.5683(a)(1) and (2)) requires that the facility be both a boat manufacturing facility that builds fiberglass boats or aluminum recreational boats and a boat manufacturing facility that is a major source of HAP either in and of itself, or because it is collocated with other sources of HAP, such that all sources combined constitute a major source. This facility meets both requirements. Further, the facility uses the open mold process for making boats, which is a process covered by 40 CFR 6363.5689(a).

7.1.4 Non-Applicability of Regulations of Concern

a. This permit is issued base on the affected gelcoat and lamination operations not being subject to 35 IAC 215 Subpart F: Coating Operations. This is because coating operations involved with boat manufacturing are not regulated by this Subpart.

b. This permit is issued based on the affected gelcoat and lamination operations not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected gelcoat and lamination operations does not use an add-on control device to achieve compliance with an emission limitation or standard for VOM and it does not have potential pre-control device emissions of PM that equals or exceeds major source threshold levels.

7.1.5 Operational Production Limits and Work Practices

a. The Permittee shall not apply onto a mold an amount of polyester resin, gelcoat, or other material in any 1 hour period that would result in emissions of VOM in excess of 8 lbs. Meeting this requirement assures

compliance with Condition 7.1.3(c) (35 IAC 215 Subpart K).

b. i. The emissions of PM from the affected gelcoat and lamination operations shall be vented to the panel filters at all times when the gelcoat application equipment is in operation and to panel filters and non-atomized “flowcoat” chopper guns for resin application.

ii. The Permittee shall follow good operating practices and procedures for the filters and non-atomized chopper guns including periodic inspections, routine maintenance, and prompt repair of defects.

iii. The Permittee shall maintain an adequate supply of replacement filters on the premises of the source.

c. For routine flushing of resin and gel coat application equipment (e.g., spray guns, flowcoaters, brushes, rollers, and squeegees), you must use a cleaning solvent that contains no more than 5 percent organic HAP by weight. For removing cured resin or gel coat from application equipment, no organic HAP content limit applies. [40 CFR 63.5734(a)]

d. You must store organic HAP-containing solvents used for removing cured resin or gel coat in containers with covers. The covers must have no visible gaps and must be in place at all times, except when equipment to be cleaned is placed in or removed from the container. On containers with a capacity greater than 7.6 liters, the distance from the top of the container to the solvent surface must be no less than 0.75 times the diameter of the container. Containers that store organic HAP-containing solvents used for removing cured resin or gel coat are exempt from the requirements of 40 CFR Part 63, Subpart T. Cured resin or gel coat means resin or gel coat that has changed from a liquid to a solid. [40 CFR 63.5734(b)]

7.1.6 Emission Limitations

a. The affected boat manufacturing process must limit organic HAP emissions from the five open molding operations listed in 40 CFR 63.5698(a)(1) thru (a)(5) (i.e., production resin, pigmented gel coat, clear gel coat, tooling resin, and tooling gel coat) to the emission limit specified by the formula in Condition 7.1.12(d)(3) and 40 CFR 63.5698(b) based on a 12-month rolling average. See Condition 7.1.12(d)(3) for formula. [40 CFR 63.5698(a)]

b. There are no other specific emission limitations for these units, however, there are source wide emission limitations in Condition 5.5 that include these units.

7.1.7 Testing Requirements

To determine the organic HAP content for each material used in your open molding resin and gel coat operations, carpet and fabric adhesive operations, or aluminum recreational boat surface coating operations, you must use one of the following options: [40 CFR 63.5758(a)]

a. Method 311 (Appendix A to 40 CFR Part 63). You may use Method 311 for determining the mass fraction of organic HAP. Use the procedures specified in 40 CFR 63.5758(a)(1)(i) and 40 CFR 63.5758(a)(1)(ii) when determining organic HAP content by Method 311. [40 CFR 63.5758(a)(1)]

b. Method 24 (Appendix A to 40 CFR Part 60). You may use Method 24 to determine the mass fraction of non-aqueous volatile matter of aluminum coatings and use that value as a substitute for mass fraction of organic HAP. [40 CFR 63.5758(a)(2)]

c. ASTM D1259-85 (Standard Test Method for Nonvolatile Content of Resins). You may use ASTM D1259-85 (available for purchase from ASTM) to measure the mass fraction of volatile matter of resins and gel coats for open molding operations and use that value as a substitute for mass fraction of organic HAP. [40 CFR 63.5758(a)(3)]

d. Alternative Method. You may use an alternative test method for determining mass fraction of organic HAP if you obtain prior approval by the Administrator. You must follow the procedure in 40 CFR 63.7(f) to submit an alternative test method for approval. [40 CFR 63.5758(a)(4)]

e. Information from the supplier or manufacturer of the material. You may rely on information other than that generated by the test methods specified in (a) through (d) in this condition, such as manufacturer's formulation data, according to 40 CFR 63.5758(a)(5)(i) through 40 CFR 63.5758(a)(5)(iii). [40 CFR 63.5758(a)(5)]

f. Solvent Blends. Solvent blends may be listed as single components for some regulated materials in certifications provided by manufacturers or suppliers. Solvent blends may contain organic HAP

which must be counted toward the total organic HAP content of the materials. When detailed organic HAP content data for solvent blends are not available, you may use the values for organic HAP content that are listed in Table 5 or 6 to this subpart. You may use Table 6 to this subpart only if the solvent blends in the materials you use do not match any of the solvent blends in Table 5 to this subpart and you know only whether the blend is either aliphatic or aromatic. However, if test results indicate higher values than those listed in Table 5 or 6 to this subpart, then the test results must be used for determining compliance. [40 CFR 63.5758(a)(6)]

7.1.8 Monitoring Requirements

None

7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected gelcoat and lamination operations to demonstrate compliance with Conditions 5.5.1, 5.5.3, 7.1.3, and 7.1.5, pursuant to Section 39.5(7)(b) of the Act:

a. The Permittee shall maintain the following general records for each type of boat deck and hull manufactured in the affected gelcoat and lamination operations:

i. The name and identification number of each VOM containing material used.

ii. The total VOM content of each VOM containing material used as determined by the applicable testing method described in Condition 7.1.7(a) or (b), % weight.

iii. The method of polyester resin application (i.e. atomized or non-atomized).

iv. The length (in feet) of each type of deck and hull manufactured.

v. Determine and record the organic HAP content of the cleaning solvents subject to Condition 7.1.5(c) using the methods specified in in 40 CFR 63.5758(a). [40 CFR 63.5737(a)]

vi. If you recycle cleaning solvents on site, you may use documentation from the solvent manufacturer or supplier or a measurement of

the organic HAP content of the cleaning solvent as originally obtained from the solvent supplier for demonstrating compliance, subject to Condition 7.1.5(c) for demonstrating compliance with organic HAP content limits. [40 CFR 63.5737(b)]

vii. At least once per month, you must visually inspect any containers holding organic HAP-containing solvents used for removing cured resin and gel coat to ensure that the containers have covers with no visible gaps. Keep records of the monthly inspections and any repairs made to the covers. [40 CFR 63.5737(c)]

b. The Permittee shall maintain records of the following item to demonstrate compliance with Condition 7.1.3(c) and 7.1.5(a):

i. The amount (in pounds) of each material used on each type of boat deck and hull mold manufactured that will result in VOM emissions, as determined by the emission calculation procedure described in Condition 7.1.12(d).

c. The Permittee shall maintain records of the following items to demonstrate compliance with the source wide emission limits in Condition 5.5:

i. The total usage of each VOM containing material on the affected gelcoat and lamination operations, tons/mo, and tons/yr.

ii. The total emissions of VOM from the affected gelcoat and lamination operations as calculated by the emissions calculation procedure described in Condition 7.1.12(d), tons/mo and tons/yr (running 12 month total).

d. The Permittee shall maintain the following records to demonstrate good operating practices and procedures for the panel filters used in the gelcoat booths and in the resin application area:

i. Records on periodic inspections of the panel filters with date, individual performing the inspection, and the nature of the inspection.

ii. Records on prompt repair of identified defects (e.g., replacement of broken, or otherwise ineffective, panel filters), with identification and description of defect,

effect on emissions, date identified, date repaired (or replaced) and nature of corrective measure (repair or replacement).

e. The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 7.1.3 or 7.1.5, which shall include:

i. Identification of the limit that may have been exceeded.

ii. Duration of the possible exceedance.

iii. An estimate of the amount of emissions in excess of the applicable standard.

iv. A description of the cause of the possible exceedance.

v. When compliance was reestablished.

7.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of an affected gelcoat and lamination operations with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

a. The Permittee shall notify the Illinois EPA within 30 days of an exceedance of the limits in Conditions 7.1.3 or 7.1.5. The notification shall include:

i. Identification of the limit that may have been exceeded.

ii. Duration of the possible exceedance.

iii. An estimate of the amount of emissions in excess of the applicable standard.

iv. A description of the cause of the possible exceedance.

v. When compliance was reestablished.

b. The Permittee shall submit the following information along with its annual emission report:

i. A summary of exceedances of the limits in Conditions 7.1.3 or 7.1.5, if any, which required notification to the Compliance

Section in accordance with Condition 7.1.10(a).

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to the affected gelcoat and lamination operations without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

a. Changes in the types of resin mixtures or gelcoats used as long as the affected gelcoat and lamination operations continues to meet the requirements of Condition 7.1.3.

b. Changes in the VOM content of resin mixtures and gelcoats used as long as the affected gelcoat and lamination operations continues to meet the requirements of Condition 7.1.3.

c. Changes in the types and sizes of boats manufactured as long as the affected gelcoat and lamination operations continues to meet the requirements of Condition 7.1.3.

d. Changes in resin and gelcoat application equipment if they are done solely for purposes of general equipment maintenance, replacement in kind, or emissions reduction. These changes must not result in an increase in potential emissions of any regulated air pollutant.

7.1.12 Compliance Procedures

a. Compliance with Condition 7.1.3(c) (35 IAC 215 Subpart K) is assured as long as the Permittee meets the operating requirement in Condition 7.1.5(a) and the recordkeeping requirements in Condition 7.1.9(a) and (b).

b. Compliance with Condition 7.1.3(d) (35 IAC 212.321) shall be demonstrated by meeting the operating requirements in Condition 7.1.5(b) and the recordkeeping requirements in Condition 7.1.9.

c. Compliance with the source wide emission limits in Condition 5.5 shall be demonstrated by the recordkeeping requirements in Condition 7.1.9 and (c) and the emissions calculation procedures described in Condition 7.1.12(d).

d. Emissions resulting from the affected gelcoat and lamination operations shall be determined by the following procedures:

i. Emission factors for resin and gelcoat application on to molds shall be based on the results of the NMMA emissions study. These results are as follows:

Material	Part	Application Method	Boat Size	VOM Content	Emission Factor, % Available
Gelcoat	Deck	Spray	18 ft	37%	46.9
Gelcoat	Hull	Spray	18 ft	37%	50.0
Gelcoat	Hull	Spray	28 ft	37%	54.3
Resin	Deck	Atomized	18 ft	35.1%	12.9
Resin	Hull	Atomized	18 ft	35.1%	14.8
Resin	Hull	Atomized	28 ft	35.1%	17.3
Resin	Deck	Non-Atomized	18 ft	35.1%	11.9
Resin	Hull	Non-Atomized	18 ft	35.1%	10.8
Resin	Deck	Atomized	18 ft	42.2%	21.1
Resin	Hull	Atomized	18 ft	42.2%	20.7
Resin	Hull	Atomized	28 ft	42.2%	23.3
Resin	Deck	Non-Atomized	18 ft	42.2%	13.4
Resin	Hull	Non-Atomized	18 ft	42.2%	11.4

These are the emission factors for manufacturing boats, listed in Table 2-1 of Baseline Characterization of Emissions from Fiberglass Boat Manufacturing For National Marine Manufacturers Association. This publication discusses the results of emissions studies of fiberglass boat manufacturing operations performed for the National Marine Manufacturers Association and approved by the USEPA.

Emission factors for boat lengths and VOM contents other than the ones listed in the above table may be based on interpolation.

Emissions shall be calculated using the following emission formula:

$$E = \sum_{i=1}^{n} U_i C_i F_i \qquad \text{Equation (1)}$$

Where:

E = Emission of VOM (lbs)

n = The total number of resins or gelcoats used

i = Subscript denoting a specific resin or gelcoat

U = Usage of the specified material (lbs)

C = VOM content of the specified material (%weight)

F = Emission factor, derived from the above table.

To accurately calculate emissions, F from Equation (1) must be determined by a series of separate equations that take into account the following factors:

< The length of the boat being built;

< The individual part (hull or deck) to which material is applied;

< Atomized or non-atomized application; and

< Percent available VOM (styrene and methyl methacrylate).

These equations (and their derivation) are presented in Attachment 6 to this permit which is incorporated here by reference.

ii. To calculate emissions resulting from the usage of other VOM containing materials, the following emission formula shall be used:

Emission Formula:

$$E = \sum_{i=1}^{n} U_i C_i$$

Where:

E = Emission of VOM (lbs)

n = The total number of materials used

i = Subscript denoting a specific material

U = Usage of the specified material (lbs)

C = VOM content of the specified material as applied (%weight)

iii. To determine compliance of the affected boat manufacturing process with 7.1.6(a).

HAP Limit = $[46(M_R) + 159(M_{pg}) + 291(M_{CG}) + 54(M_{TR}) + 214(M_{TG})]$

Where:

M_R = mass of production resin used in the past 12 months, excluding any materials exempt under 40 CFR 63.5698(d) of this section, megagrams.

M_{PG} = mass of pigmented gel coat used in the past 12 months, excluding any materials exempt under 40 CFR 63.5698(d) of this section, megagrams.

M_{CG} = mass of clear gel coat used in the past 12 months, excluding any materials exempt under 40 CFR 63.5698(d) of this section, megagrams.

M_{TR} = mass of tooling resin used in the past 12 months, excluding any materials exempt under 40 CFR 63.5698(d) of this section, megagrams.

M_{TG} = mass of tooling gel coat used in the past 12 months, excluding any materials exempt under 40 CFR 63.5698(d) of this section, megagrams.

7.1.13 The source shall obtain an adjusted standard from 35 IAC 215.301 (Condition 7.1.3(c)) of this permit or demonstrate compliance with 35 IAC 215.301 (Condition 7.1.3(c)) by December 31, 2004.

7.2 Final Assembly Area
Control: None

7.2.1 Description

This unit consists of the use of floor lacquer, adhesives and caulks (both adhesives and sealants) for installation of carpet, installation/sealing of counter tops and cabinets, joining of hulls to decks, building of seats and head liners, etc.

7.2.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Floor Lacquer Application	Application of Lacquer to Floor That Seals the Buoyancy Foam	July 1993	None
Carpet Adhesive Application	Application of Adhesives to Stick Carpet to Boat Decks	July 1993	None
Caulk Application	Application of Caulk to Join Deck and Hull	July 1993	None

7.2.3 Applicability Provisions and Applicable Regulations

a. The “affected final assembly area” for the purpose of these unit-specific conditions, consists of the operations as described in Conditions 7.2.1 and 7.2.2.

b. The affected final assembly area is subject to the emission limits and requirements identified in Section 5 of this Permit.

c. The affected final assembly area is subject to 40 CFR 63, Subpart VVVV, National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing. The affected final assembly area (specifically the carpet and fabric adhesive operations) is a portion of boat manufacturing facilities covered by 40 CFR 63.5689(e).

d. The affected final assembly area is subject to 35 IAC 215 Subpart K, Use of Organic Material, which provides that:

i. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission

unit, except as provided in Condition 7.2.3(c)(ii) (35 IAC 215.302) and the following exception: If no odor nuisance exists the limitation of 35 IAC 215 Subpart K shall apply only to photochemically reactive material [35 IAC 215.301].

ii. Pursuant to 35 IAC 215.302, emissions of organic material in excess of those permitted by Condition 7.2.3(c)(i) (35 IAC 215.301) are allowable if such emissions are controlled by one of the following methods:

A. Flame, thermal or catalytic incineration so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 percent of the hydrocarbons to carbon dioxide and water [35 IAC 215.302(a)];

B. A vapor recovery system which adsorbs and/or condenses at least 85 percent of the total uncontrolled organic material that would otherwise be emitted to the atmosphere [35 IAC 215.302(b)]; or

C. Any other air pollution control equipment approved by the Illinois EPA and approved by the USEPA as a SIP revision capable of reducing by 85 percent or more the uncontrolled organic material that would be otherwise emitted to the atmosphere [35 IAC 215.302(c)].

7.2.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected final assembly area not being subject to 35 IAC 215 Subpart F: Coating Operations. This is because these coating and adhesive operations are not regulated by this Subpart.

b. This permit is issued based on the affected final assembly area not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected final assembly area does not use an add-on control device to achieve compliance with an emission limitation or standard.

7.2.5 Operational Production Limits and Work Practices

The Permittee shall not apply an amount of material in any 1 hour period that would result in emissions of VOM in

excess of 8 lbs. Meeting this requirement assures compliance with Condition 7.2.3(d) (35 IAC 215 Subpart K).

7.2.6 Emission Limitations

There are no specific emission limitations for these units, however, there are source wide emission limitations in Condition 5.5 that include these units.

7.2.7 Testing Requirements

To determine the organic HAP content for each material used in your open molding resin and gel coat operations, carpet and fabric adhesive operations, or aluminum recreational boat surface coating operations, you must use one of the following options: [40 CFR 63.5758(a)]

a. Method 311 (Appendix A to 40 CFR Part 63). You may use Method 311 for determining the mass fraction of organic HAP. Use the procedures specified in 40 CFR 63.5758(a)(1)(i) and 40 CFR 63.5758(a)(1)(ii) when determining organic HAP content by Method 311. [40 CFR 63.5758(a)(1)]

b. Method 24 (Appendix A to 40 CFR Part 60). You may use Method 24 to determine the mass fraction of non-aqueous volatile matter of aluminum coatings and use that value as a substitute for mass fraction of organic HAP. [40 CFR 63.5758(a)(2)]

c. ASTM D1259-85 (Standard Test Method for Nonvolatile Content of Resins). You may use ASTM D1259-85 (available for purchase from ASTM) to measure the mass fraction of volatile matter of resins and gel coats for open molding operations and use that value as a substitute for mass fraction of organic HAP. [40 CFR 63.5758(a)(3)]

d. Alternative Method. You may use an alternative test method for determining mass fraction of organic HAP if you obtain prior approval by the Administrator. You must follow the procedure in 40 CFR 63.7(f) to submit an alternative test method for approval. [40 CFR 63.5758(a)(4)]

e. Information from the supplier or manufacturer of the material. You may rely on information other than that generated by the test methods specified in (a) through (d) in this condition, such as manufacturer's formulation data, according to 40 CFR 63.5758(a)(5)(i) through 40 CFR 63.5758(a)(5)(iii). [40 CFR 63.5758(a)(5)]

f. Solvent Blends. Solvent blends may be listed as single components for some regulated materials in certifications provided by manufacturers or suppliers. Solvent blends may contain organic HAP which must be counted toward the total organic HAP content of the materials. When detailed organic HAP content data for solvent blends are not available, you may use the values for organic HAP content that are listed in Table 5 or 6 to this subpart. You may use Table 6 to this subpart only if the solvent blends in the materials you use do not match any of the solvent blends in Table 5 to this subpart and you know only whether the blend is either aliphatic or aromatic. However, if test results indicate higher values than those listed in Table 5 or 6 to this subpart, then the test results must be used for determining compliance. [40 CFR 63.5758(a)(6)]

7.2.8 Monitoring Requirements

None

7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected final assembly area to demonstrate compliance with Conditions 5.5.1 and 7.2.3, pursuant to Section 39.5(7)(b) of the Act:

a. The Permittee shall maintain the following general records for each material applied using the affected final assembly area:

i. The name and identification number of each VOM containing material used.

ii. The total VOM content of each VOM containing material used as determined by the testing method described in Condition 7.2.7(a), % weight.

b. The Permittee shall maintain records of the following item to demonstrate compliance with Condition 7.2.3(d) and 7.2.5:

i. The amount of each material applied with the affected final assembly area that will result in 8 lbs of VOM emissions, as determined by the emission calculation procedure described in Condition 7.2.12(c), lbs.

c. The Permittee shall maintain records of the following items to demonstrate compliance with the source wide emission limits in Condition 5.5:

   i. The total usage of each material applied with the affected final assembly area, tons/mo, and tons/yr.

   ii. The emissions of VOM from the affected final assembly area as calculated by the compliance procedure described in Condition 7.2.12(c), tons/mo and tons/yr (12 month rolling average).

d. The Permittee shall maintain records of the following items for each exceedance of the limits in Condition 7.2.3 which shall include:

   i. Identification of the limit that may have been exceeded.

   ii. Duration of the possible exceedance.

   iii. An estimate of the amount of emissions in excess of the applicable standard.

   iv. A description of the cause of the possible exceedance.

   v. When compliance was reestablished.

7.2.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected final assembly area with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

a. The Permittee shall notify the Illinois EPA within 30 days of an exceedance of the limits in Condition 7.2.3. The notification shall include:

   i. Identification of the limit that may have been exceeded.

   ii. Duration of the possible exceedance.

   iii. An estimate of the amount of emissions in excess of the applicable standard.

   iv. A description of the cause of the possible exceedance.

v. When compliance was reestablished.

b. The Permittee shall submit the following information along with its annual emission report:

i. A summary of exceedances of the limits in Condition 7.2.3, if any, which required notification to the Compliance Section in accordance with Condition 7.2.10(a).

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to the affected final assembly area without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Changes in the types of coatings and adhesives used as long as the affected final assembly area continues to meet the requirements of Condition 7.2.3.

7.2.12 Compliance Procedures

a. Compliance with Condition 7.2.3(d) (35 IAC 215 Subpart K) is assured as long as the Permittee meets the operating requirement in Condition 7.2.5 and the recordkeeping requirements in Condition 7.2.9.

b. Compliance with the source wide emission limits in Condition 5.5 shall be demonstrated by the recordkeeping requirements in Condition 7.2.9 and the emissions calculation procedures described in Condition 7.2.12(c).

c. To calculate emissions resulting from the usage of adhesives, solvents, coatings or other VOM containing materials, the following emission formula shall be used:

Emission Formula:

$$E = \sum_{i=1}^{n} U_i C_i$$

Where:

E = Emission of VOM (lbs)

n = The total number of materials used

i = Subscript denoting a specific material

U = Usage of the specified material (lbs)

C = VOM content of the specified material as applied (%weight)

7.2.13 The source shall obtain an adjusted standard from 35 IAC 215.301 (Condition 7.2.3(d)) of this permit or demonstrate compliance with 35 IAC 215.301 (Condition 7.2.3(d)) by December 31, 2004.

7.3 Woodworking Shop
Control: Cyclone and Bag Filter

7.3.1 Description

The woodworking shop is used to manufacture seat frames, interior cabinets, wood decks, and wood reinforcements. Emission units in this area include a computerized router which is designed to accurately cut parts out of multiple pieces of marine grade plywood in a single pass and a dip tank used to apply wood preservative. There are no VOM emissions from this unit as no VOM materials are used in this woodworking shop. Emissions of PM from this area are controlled by a cyclone and bag filter.

7.3.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Routers, Circular Saws, etc.	Equipment for Cutting Wood	July 1993	Cyclones (2) and Bag Filters (2 Sets)

7.3.3 Applicability Provisions and Applicable Regulations

a. The “affected woodworking shop” for the purpose of these unit-specific conditions, is the woodworking shop described in Conditions 7.3.1 and 7.3.2.

b. The affected woodworking shop is subject to the emission limits and requirements identified in Section 5 of this Permit.

c. The affected woodworking shop is subject to 35 IAC 212.681 which states that 35 IAC 212.321 and 212.322 shall not apply to industries consisting of grinding, woodworking and sandblasting or shotblasting but are subject to Subpart R of 35 IAC Part 212.

d. The affected woodworking shop is subject to 35 IAC 212.301 which states that no person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally toward the zenith at a point beyond the property line of the source.

7.3.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected woodworking shop not being subject to 40 CFR 63, Subpart JJ: National Emission Standards for Wood Furniture Manufacturing Operations, because the USEPA has determined that wood furniture on a boat is

integral to the boat cabin and is not comparable to the furniture regulated by 40 CFR 63, Subpart JJ.

b. The affected woodworking shop is not subject to 35 IAC 215.301 pursuant to 35 IAC 215.209 because it is required to meet the requirements of 35 IAC 215 Subpart F.

c. This permit is issued based on the affected woodworking shop not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected woodworking shop does not use an add-on control device to achieve compliance with an emission limitation or standard for VOM and it does not have potential pre-control device emissions of PM that equals or exceeds major source threshold levels.

d. The affected woodworking shop is not subject to 35 IAC 215.204(l), Organic Materials Emission Standards and Limitations for Manufacturing Plants, since the affected woodworking shop is not engaged in operations that require/make use of materials containing volatile organic materials.

7.3.5 Operational Production Limits and Work Practices

a. i. The emissions of PM from the affected woodworking shop shall be vented to the cyclone and bag filter at all times when the equipment is in operation.

ii. The Permittee shall follow good operating practices and procedures for the cyclone and bag filter, including periodic inspections, routine maintenance, and prompt repair of defects.

iii. The Permittee shall maintain an adequate supply of replacement bag filters on the premises of the source.

7.3.6 Emission Limitations

There are no specific emission limitations for these units, however, there are source wide emission limitations in Condition 5.5 that include these units.

7.3.7 Testing Requirements

None

7.3.8 Monitoring Requirements

None

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected woodworking shop to demonstrate compliance with Conditions 5.5.1, 5.5.3, 7.3.3, and 7.3.5, pursuant to Section 39.5(7)(b) of the Act:

a. The Permittee shall maintain the following records to demonstrate good operating practices and procedures for the cyclone/bag filter:

   i. Records for periodic inspection of the cyclone and bag filter with date, individual performing the inspection, and the nature of the inspection.

   ii. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired and nature of repair.

b. The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 7.3.3 or 7.3.5, which shall include:

   i. Identification of the limit that may have been exceeded.

   ii. Duration of the possible exceedance.

   iii. An estimate of the amount of emissions in excess of the applicable standard.

   iv. A description of the cause of the possible exceedance.

   v. When compliance was reestablished.

7.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of the affected woodworking shop with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

a. The Permittee shall notify the Illinois EPA within 30 days of an exceedance of the limits in Conditions 7.3.3 or 7.3.5. The notification shall include:

i. Identification of the limit that may have been exceeded.

ii. Duration of the possible exceedance.

iii. An estimate of the amount of emissions in excess of the applicable standard.

iv. A description of the cause of the possible exceedance.

v. When compliance was reestablished.

b. The Permittee shall submit the following information along with its annual emission report:

i. A summary of exceedances of the limits in Conditions 7.3.3 or 7.3.5, if any, which required notification to the Compliance Section in accordance with Condition 7.3.10(a).

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to the affected woodworking shop without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Changes in the types of coatings used as long as the affected woodworking shop continues to meet the requirements of Condition 7.3.3.

7.3.12 Compliance Procedures

Compliance with Condition 7.3.3(d) (35 IAC 215.204(l)) shall be demonstrated by the recordkeeping requirements in Condition 7.3.9 and by the Operational Production Limits and Work Practices in Condition 7.3.5.

7.4 Resin Storage Tanks
Control: None

7.4.1 Description

Four polyester resin storage tanks are operated at this facility.

7.4.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
4 Resin Storage Tanks	6,000 Gallons Tanks Used to Store Polyester Resin	July 1993	Submerged Fill

7.4.3 Applicability Provisions and Applicable Regulations

a. An “affected storage tank” for the purpose of these unit-specific conditions, is a storage tank described in Conditions 7.4.1 and 7.4.2.

b. Each affected storage tank is subject to the emission limits and requirements identified in Section 5 of this Permit.

c. Each affected storage tank is subject to 35 IAC 215.122 which provides that:

i. The Permittee shall not discharge more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading area having through-put of greater than 151 cubic meters per day (40,000 gal/day) into any railroad tank car, tank truck or trailer unless such loading area is equipped with submerged loading pipes or a device that is equally effective in controlling emissions and is approved by the Illinois EPA according to the provisions of 35 IAC 201 [35 IAC 215.122(a)].

ii. The Permittee shall not load any organic material into any stationary tank having a storage capacity of greater than 946 1 (250 gal), unless such tank is equipped with a permanent submerged loading pipe or an equivalent device approved by the Illinois EPA according to the provisions of 35 IAC 201, or unless such tank is a pressure tank as described in 35 IAC 215.121(a) or is fitted

with a recovery system as described in 35 IAC 215.121(b)(2) [35 IAC 215.122(b)].

iii. Exception: If no odor nuisance exists the limitations of Conditions 7.4.3(c)(i) and (ii) shall only apply to the loading of VOL with a vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3°K (70°F) [35 IAC 215.122(c)].

7.4.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected storage tanks not being subject to the New Source Performance Standards (NSPS) for Volatile Organic Liquid Storage Vessels, 40 CFR Part 60, Subpart Kb because no affected storage tank has a capacity greater than 10,566 gallons.

b. This permit is issued based on the affected storage tanks not being subject to 35 IAC 215.121, because each affected storage tank has a capacity less than 40,000 gallons.

c. This permit is issued based on the affected storage tanks not being subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources, because the affected storage tanks do not use an add-on control device to achieve compliance with an emission limitation or standard.

7.4.5 Operational Production Limits and Work Practices

Each affected storage tank shall be loaded with volatile organic liquids via a permanent submerged loading pipe or equivalent device approved by the Illinois EPA.

7.4.6 Emission Limitations

There are no specific emission limitations for this unit, however, there are source wide emission limitations in Condition 5.5 that include this unit.

7.4.7 Testing Requirements

None

7.4.8 Monitoring Requirements

None

7.4.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected storage tanks to demonstrate compliance with Conditions 5.5.1, 5.5.3, 7.4.3, and 7.4.5, pursuant to Section 39.5(7)(b) of the Act:

a. The Permittee shall maintain records of the following items to demonstrate compliance with condition 5.5.3:

   i. Chemical name and CAS number of each material stored in the affected storage tanks.

   ii. Throughput of each material stored in the affected storage tanks (gallons).

   ii. Emissions of VOM from each affected storage tank as calculated by the procedure described in Condition 7.4.12, ton/mo and ton/yr.

b. The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 7.4.3 or 7.4.5, which shall include:

   i. Identification of the limit that may have been exceeded.

   ii. Duration of the possible exceedance.

   iii. An estimate of the amount of emissions in excess of the applicable standard.

   iv. A description of the cause of the possible exceedance.

   v. When compliance was reestablished.

7.4.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of deviations of an affected storage tank with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

a. The Permittee shall notify the Illinois EPA within 30 days of an exceedance of the limits in Conditions 7.4.3 or 7.4.5. The notification shall include:

   i. Identification of the limit that may have been exceeded.

ii. Duration of the possible exceedance.

iii. An estimate of the amount of emissions in excess of the applicable standard.

iv. A description of the cause of the possible exceedance.

v. When compliance was reestablished.

b. The Permittee shall submit the following information along with its annual emission report:

i. A summary of exceedances of the limits in Conditions 7.4.3 or 7.4.5, if any, which required notification to the Compliance Section in accordance with Condition 7.4.10(a).

7.4.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to the affected storage tanks without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Changes in the volatile organic liquids stored in the affected storage tanks as long as the tanks continue to comply with the requirements of this permit.

7.4.12 Compliance Procedures

a. Compliance with Condition 7.4.3(c) (35 IAC 215.122) is assured as long as the Permittee meets the operating requirements of Condition 7.4.5.

b. Compliance with the source wide emission limit in Condition 5.5.3 shall be determined by the recordkeeping requirements in Condition 7.4.9(a) and the latest version of the USEPA's TANKS computer software.

8.0 GENERAL PERMIT CONDITIONS

8.1 Permit Shield

Pursuant to Section 39.5(7)(j) of the Act, the Permittee has requested and has been granted a permit shield. This permit shield provides that compliance with the conditions of this permit shall be deemed compliance with applicable requirements which were applicable as of the date the proposed permit for this source was issued, provided that either the applicable requirements are specifically identified within this permit, or the Illinois EPA, in acting on this permit application, has determined that other requirements specifically identified are not applicable to this source and this determination (or a concise summary thereof) is included in this permit.

This permit shield does not extend to applicable requirements which are promulgated after September 22, 2003 (the date of issuance of the draft permit) unless this permit has been modified to reflect such new requirements.

8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is not an affected source under Title IV of the CAA and is not subject to requirements pursuant to Title IV of the CAA.

8.3 Emissions Trading Programs

No permit revision shall be required for increases in emissions allowed under any USEPA approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for elsewhere in this permit and that are authorized by the applicable requirement [Section 39.5(7)(o)(vii) of the Act].

8.4 Operational Flexibility/Anticipated Operating Scenarios

8.4.1 Changes Specifically Addressed by Permit

Physical or operational changes specifically addressed by the Conditions of this permit that have been identified as not requiring Illinois EPA notification may be implemented without prior notice to the Illinois EPA.

8.4.2 Changes Requiring Prior Notification

The Permittee is authorized to make physical or operational changes that contravene express permit terms without applying for or obtaining an amendment to this permit, provided that [Section 39.5(12)(a)(i) of the Act]:

a. The changes do not violate applicable requirements;

b. The changes do not contravene federally enforceable permit terms or conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;

c. The changes do not constitute a modification under Title I of the CAA;

d. Emissions will not exceed the emissions allowed under this permit following implementation of the physical or operational change; and

e. The Permittee provides written notice to the Illinois EPA, Division of Air Pollution Control, Permit Section, at least 7 days before commencement of the change. This notice shall:

i. Describe the physical or operational change;

ii. Identify the schedule for implementing the physical or operational change;

iii. Provide a statement of whether or not any New Source Performance Standard (NSPS) is applicable to the physical or operational change and the reason why the NSPS does or does not apply;

iv. Provide emission calculations which demonstrate that the physical or operational change will not result in a modification; and

v. Provide a certification that the physical or operational change will not result in emissions greater than authorized under the conditions of this permit.

8.5 Testing Procedures

Tests conducted to measure composition of materials, efficiency of pollution control devices, emissions from process or control equipment, or other parameters shall be conducted using standard test methods. Documentation of the test date, conditions, methodologies, calculations, and test results shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any tests conducted as required by this permit or as the result of a request by the Illinois EPA shall be submitted as specified in Condition 8.6.

8.6 Reporting Requirements

8.6.1 Monitoring Reports

If monitoring is required by any applicable requirements or conditions of this permit, a report summarizing the required monitoring results, as specified in the conditions of this permit, shall be submitted to the Air Compliance Section of the Illinois EPA every six months as follows [Section 39.5(7)(f) of the Act]:

Monitoring Period	Report Due Date
January – June	September 1
July – December	March 1

All instances of deviations from permit requirements must be clearly identified in such reports. All such reports shall be certified in accordance with Condition 9.9.

8.6.2 Test Notifications

Unless otherwise specified elsewhere in this permit, a written test plan for any test required by this permit shall be submitted to the Illinois EPA for review at least 60 days prior to the testing pursuant to Section 39.5(7)(a) of the Act. The notification shall include at a minimum:

a. The name and identification of the affected unit(s);

b. The person(s) who will be performing sampling and analysis and their experience with similar tests;

c. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the source and any control equipment will be determined;

d. The specific determination of emissions and operation which are intended to be made, including sampling and monitoring locations;

e. The test method(s) which will be used, with the specific analysis method, if the method can be used with different analysis methods;

f. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification; and

g. Any proposed use of an alternative test method, with detailed justification.

8.6.3 Test Reports

Unless otherwise specified elsewhere in this permit, the results of any test required by this permit shall be submitted to the Illinois EPA within 60 days of completion of the testing. The test report shall include at a minimum [Section 39.5(7)(e)(i) of the Act]:

a. The name and identification of the affected unit(s);

b. The date and time of the sampling or measurements;

c. The date any analyses were performed;

d. The name of the company that performed the tests and/or analyses;

e. The test and analytical methodologies used;

f. The results of the tests including raw data, and/or analyses including sample calculations;

g. The operating conditions at the time of the sampling or measurements; and

h. The name of any relevant observers present including the testing company's representatives, any Illinois EPA or USEPA representatives, and the representatives of the source.

8.6.4 Reporting Addresses

a. The following addresses should be utilized for the submittal of reports, notifications, and renewals:

i. Illinois EPA - Air Compliance Section

Illinois Environmental Protection Agency
Bureau of Air
Compliance Section (MC 40)
P.O. Box 19276
Springfield, Illinois 62794-9276

ii. Illinois EPA - Air Regional Field Office

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

iii. Illinois EPA - Air Permit Section

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

iv. USEPA Region 5 - Air Branch

USEPA (AE - 17J)
Air and Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

b. Unless otherwise specified in the particular provision of this permit, reports shall be sent to the Illinois EPA - Air Compliance Section with a copy sent to the Illinois EPA - Air Regional Field Office.

8.7 Obligation to Comply with Title I Requirements

Any term, condition, or requirement identified in this permit by T1, T1R, or T1N is established or revised pursuant to 35 IAC Part 203 or 40 CFR 52.21 (“Title I provisions”) and incorporated into this permit pursuant to both Section 39.5 and Title I provisions. Notwithstanding the expiration date on the first page of this permit, the Title I conditions remain in effect pursuant to Title I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

9.0 STANDARD PERMIT CONDITIONS

9.1 Effect of Permit

9.1.1 The issuance of this permit does not release the Permittee from compliance with State and Federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or applicable ordinances, except as specifically stated in this permit and as allowed by law and rule [Section 39.5(7)(j)(iv) of the Act].

9.1.2 In particular, this permit does not alter or affect the following:

a. The provisions of Section 303 (emergency powers) of the CAA, including USEPA's authority under that Section;

b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

c. The applicable requirements of the acid rain program consistent with Section 408(a) of the CAA; and

d. The ability of USEPA to obtain information from a source pursuant to Section 114 (inspections, monitoring, and entry) of the CAA.

9.1.3 Notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

9.2 General Obligations of Permittee

9.2.1 Duty to Comply

The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the CAA and the Act, and is grounds for any or all of the following: enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application [Section 39.5(7)(o)(i) of the Act].

The Permittee shall meet applicable requirements that become effective during the permit term in a timely manner unless an alternate schedule for compliance with the applicable requirement is established.

9.2.2 Duty to Maintain Equipment

The Permittee shall maintain all equipment covered under this permit in such a manner that the performance or operation of such equipment shall not cause a violation of applicable requirements.

9.2.3 Duty to Cease Operation

No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless such malfunction or breakdown is allowed by a permit condition [Section 39.5(6)(c) of the Act].

9.2.4 Disposal Operations

The source shall be operated in such a manner that the disposal of air contaminants collected by the equipment operations, or activities shall not cause a violation of the Act or regulations promulgated thereunder.

9.2.5 Duty to Pay Fees

The Permittee must pay fees to the Illinois EPA consistent with the fee schedule approved pursuant to Section 39.5(18) of the Act, and submit any information relevant thereto [Section 39.5(7)(o)(vi) of the Act]. The check should be payable to "Treasurer, State of Illinois" and sent to: Fiscal Services Section, Illinois Environmental Protection Agency, P.O. Box 19276, Springfield, Illinois 62794-9276.

9.3 Obligation to Allow Illinois EPA Surveillance

Upon presentation of proper credentials and other documents, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Section 39.5(7)(a) and (p)(ii) of the Act and 415 ILCS 5/4]:

a. Enter upon the Permittee's premises where an actual or potential emission unit is located; where any regulated equipment, operation, or activity is located or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect during hours of operation any sources, equipment (including monitoring and air pollution control

equipment), practices, or operations regulated or required under this permit;

d. Sample or monitor any substances or parameters at any location:

i. At reasonable times, for the purposes of assuring permit compliance; or

ii. As otherwise authorized by the CAA, or the Act.

e. Obtain and remove samples of any discharge or emission of pollutants authorized by this permit; and

f. Enter and utilize any photographic, recording, testing, monitoring, or other equipment for the purposes of preserving, testing, monitoring, or recording any activity, discharge or emission at the source authorized by this permit.

9.4 Obligation to Comply with Other Requirements

The issuance of this permit does not release the Permittee from applicable State and Federal laws and regulations, and applicable local ordinances addressing subjects other than air pollution control.

9.5 Liability

9.5.1 Title

This permit shall not be considered as in any manner affecting the title of the premises upon which the permitted source is located.

9.5.2 Liability of Permittee

This permit does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the sources.

9.5.3 Structural Stability

This permit does not take into consideration or attest to the structural stability of any unit or part of the source.

9.5.4 Illinois EPA Liability

This permit in no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any

loss due to damage, installation, maintenance, or operation of the source.

9.5.5 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege [Section 39.5(7)(o)(iv) of the Act].

9.6 Recordkeeping

9.6.1 Control Equipment Maintenance Records

A maintenance record shall be kept on the premises for each item of air pollution control equipment. As a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.

9.6.2 Records of Changes in Operation

A record shall be kept describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes [Section 39.5(12)(b)(iv) of the Act].

9.6.3 Retention of Records

a. Records of all monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit [Section 39.5(7)(e)(ii) of the Act].

b. Other records required by this permit shall be retained for a period of at least 5 years from the date of entry unless a longer period is specified by a particular permit provision.

9.7 Annual Emissions Report

The Permittee shall submit an annual emissions report to the Illinois EPA, Compliance Section no later than May 1 of the following year, as required by 35 IAC Part 254.

9.8 Requirements for Compliance Certification

Pursuant to Section 39.5(7)(p)(v) of the Act, the Permittee shall submit annual compliance certifications. The compliance

certifications shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by permit condition. The compliance certifications shall be submitted to the Air Compliance Section, Air Regional Field Office, and USEPA Region 5 – Air Branch. The addresses for the submittal of the compliance certifications are provided in Condition 8.6.4 of this permit.

a. The certification shall include the identification of each term or condition of this permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, both currently and over the reporting period consistent with the conditions of this permit.

b. All compliance certifications shall be submitted to USEPA Region 5 in Chicago as well as to the Illinois EPA.

c. All compliance reports required to be submitted shall include a certification in accordance with Condition 9.9.

9.9 Certification

Any document (including reports) required to be submitted by this permit shall contain a certification by a responsible official of the Permittee that meets the requirements of Section 39.5(5) of the Act [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as an attachment to this permit.

9.10 Defense to Enforcement Actions

9.10.1 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit [Section 39.5(7)(o)(ii) of the Act].

9.10.2 Emergency Provision

a. An emergency shall be an affirmative defense to an action brought for noncompliance with the technology-based emission limitations under this permit if the following conditions are met through properly signed, contemporaneous operating logs, or other relevant evidence:

i. An emergency occurred as provided in Section 39.5(7)(k) of the Act and the Permittee can identify the cause(s) of the emergency.

Normally, an act of God such as lightning or flood is considered an emergency;

ii. The permitted source was at the time being properly operated;

iii. The Permittee submitted notice of the emergency to the Illinois EPA within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and

iv. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitations, standards, or regulations in this permit.

b. This provision is in addition to any emergency or upset provision contained in any applicable requirement. This provision does not relieve a Permittee of any reporting obligations under existing federal or state laws or regulations.

9.11 Permanent Shutdown

This permit only covers emission units and control equipment while physically present at the indicated source location(s). Unless this permit specifically provides for equipment relocation, this permit is void for the operation or activity of any item of equipment on the date it is removed from the permitted location(s) or permanently shut down. This permit expires if all equipment is removed from the permitted location(s), notwithstanding the expiration date specified on this permit.

9.12 Reopening and Reissuing Permit for Cause

9.12.1 Permit Actions

This permit may be modified, reopened, and reissued, for cause pursuant to Section 39.5(15) of the Act. The filing of a request by the Permittee for a permit modification, revocation, and reissuance, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [Section 39.5(7)(o)(iii) of the Act].

9.12.2 Reopening and Revision

This permit must be reopened and revised if any of the following occur [Section 39.5(15)(a) of the Act]:

a. Additional requirements become applicable to the equipment covered by this permit and three or more years remain before expiration of this permit;

b. Additional requirements become applicable to an affected source for acid deposition under the acid rain program;

c. The Illinois EPA or USEPA determines that this permit contains a material mistake or inaccurate statement when establishing the emission standards or limitations, or other terms or conditions of this permit; and

d. The Illinois EPA or USEPA determines that this permit must be revised to ensure compliance with the applicable requirements of the Act.

9.12.3 Inaccurate Application

The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation under Section 39.5(15)(b) of the Act.

9.12.4 Duty to Provide Information

The Permittee shall furnish to the Illinois EPA, within a reasonable time specified by the Illinois EPA any information that the Illinois EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Illinois EPA copies of records required to be kept by this permit, or for information claimed to be confidential, the Permittee may furnish such records directly to USEPA along with a claim of confidentiality [Section 39.5(7)(o)(v) of the Act].

9.13 Severability Clause

The provisions of this permit are severable, and should any one or more be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected. The rights and obligations of the Permittee shall be construed and enforced as if this permit did not contain the particular provisions held to be invalid and the applicable requirements

underlying these provisions shall remain in force [Section 39.5(7)(i) of the Act].

9.14 Permit Expiration and Renewal

The right to operate terminates on the expiration date unless the Permittee has submitted a timely and complete renewal application. For a renewal to be timely it must be submitted no later than 9 and no sooner than 12 months prior to expiration. The equipment may continue to operate during the renewal period until final action is taken by the Illinois EPA, in accordance with the original permit conditions [Section 39.5(5)(l), (n), and (o) of the Act].

10.0 ATTACHMENTS

10.1 Attachment 1 - Emissions of Particulate Matter from New Process Emission Units

10.1.1 Process Emission Units for Which Construction or Modification Commenced On or After April 14, 1972

a. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 [35 IAC 212.321(a)].

b. Interpolated and extrapolated values of the data in subsection (c) of 35 IAC 212.321 shall be determined by using the equation [35 IAC 212.321(b)]:

$$E = A(P)^B$$

Where:

P = Process weight rate

E = Allowable emission rate

i. Up to process weight rates of 408 Mg/hr (450 ton/hr):

	Metric	English
P	Mg/hr	Ton/hr
E	kg/hr	lb/hr
A	1.214	2.54
B	0.534	0.534

ii. For process weight rate greater than or equal to 408 Mg/hr (450 Ton/hr):

	Metric	English
P	Mg/hr	Ton/hr
E	kg/hr	lb/hr
A	11.42	24.8
B	0.16	0.16

c. Limits for Process Emission Units For Which Construction or Modification Commenced on or After April 19, 1972 [35 IAC 212.321(c)]:

Metric		English	
P	E	P	E
Mg/hr	kg/hr	Ton/hr	lb/hr
0.05	0.25	0.05	0.55
0.1	0.29	0.10	0.77
0.2	0.42	0.2	1.10
0.3	0.64	0.30	1.35
0.4	0.74	0.40	1.58
0.5	0.84	0.50	1.75
0.7	1.00	0.75	2.40
0.9	1.15	1.00	2.60
1.8	1.66	2.00	3.70
2.7	2.1	3.00	4.60
3.6	2.4	4.00	5.35
4.5	2.7	5.00	6.00
9.0	3.9	10.00	8.70
13.0	4.8	15.00	10.80
18.0	5.7	20.00	12.50
23.0	6.5	25.00	14.00
27.0	7.1	30.00	15.60
32.0	7.7	35.00	17.00
36.0	8.2	40.00	18.20
41.0	8.8	45.00	19.20
45.0	9.3	50.00	20.50
90.0	13.4	100.00	29.50
140.0	17.0	150.00	37.00
180.0	19.4	200.00	43.00
230.0	22.0	250.00	48.50
270.0	24.0	300.00	53.00
320.0	26.0	350.00	58.00
360.0	28.0	400.00	62.00
408.0	30.1	450.00	66.00
454.0	30.4	500.00	67.00

10.2 Attachment 2 - Example Certification by a Responsible Official

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 directly responsible for gathering 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.

Signature: _____

Name: _____

Official Title: _____

Telephone No.: _____

Date Signed: _____

10.3 Attachment 3 - Guidance on Revising This Permit

The Permittee must submit an application to the Illinois EPA using the appropriate revision classification in accordance with Sections 39.5(13) and (14) of the Act and 35 IAC 270.302. Specifically, there are currently three classifications for revisions to a CAAPP permit. These are:

1. Administrative Permit Amendment;

2. Minor Permit Modification; and

3. Significant Permit Modification.

The Permittee must determine, request, and submit the necessary information to allow the Illinois EPA to use the appropriate procedure to revise the CAAPP permit. A brief explanation of each of these classifications follows.

1. Administrative Permit Amendment

- Corrects typographical errors;

- Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source;

- Requires more frequent monitoring or reporting by the Permittee;

- Allows for a change in ownership or operational control of the source where no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittees has been submitted to the Illinois EPA. This shall be handled by completing form 272-CAAPP, REQUEST FOR OWNERSHIP CHANGE FOR CAAPP PERMIT; or

- Incorporates into the CAAPP permit a construction permit, provided the conditions of the construction permit meet the requirements for the issuance of CAAPP permits.

2. Minor Permit Modification

- Do not violate any applicable requirement;

- Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;

- Do not require a case-by-case determination of an emission limitation or other standard, or a source-specific determination of ambient impacts, or a visibility or increment analysis;

- Do not seek to establish or change a permit term or condition for which there is no corresponding underlying requirement and which avoids an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:

    - A federally enforceable emissions cap assumed to avoid classification as a modification under any provision of Title I of the CAA; and

    - An alternative emissions limit approved pursuant to regulations promulgated under Section 112(i)(5) of the CAA.

- Are not modifications under any provision of Title I of the CAA;

- Are not required to be processed as a significant permit modification; and

- Modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches.

An application for a minor permit modification shall include the following:

- A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;

- The source’s suggested draft permit/conditions;

- Certification by a responsible official that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and

- Information as contained on form 271-CAAPP, MINOR PERMIT MODIFICATION FOR CAAPP PERMIT for the Illinois EPA to use to notify USEPA and affected States.

3. Significant Permit Modification

- Applications that do not qualify as either minor permit modifications or as administrative permit amendments;

- Applications requesting a significant change in existing monitoring permit terms or conditions;

- Applications requesting a relaxation of reporting or recordkeeping requirements; and

- Cases in which, in the judgment of the Illinois EPA, action on an application for modification would require decisions to be made on technically complex issues.

An application for a significant permit modification shall include the following:

- A detailed description of the proposed change(s), including all physical changes to equipment, changes in the method of operation, changes in emissions of each pollutant, and any new applicable requirements which will apply as a result of the proposed change. Note that the Permittee need only submit revised forms for equipment and operations that will be modified.

The Illinois EPA requires the information on the following appropriate forms to be submitted in accordance with the proper classification:

- Form 273-CAAPP, REQUEST FOR ADMINISTRATIVE PERMIT AMENDMENT FOR CAAPP PERMIT; or

- Form 271-CAAPP, MINOR PERMIT MODIFICATION FOR CAAPP PERMIT; or

- Form 200-CAAPP, APPLICATION FOR CAAPP PERMIT (for significant modification).

Application forms can be obtained from the Illinois EPA website at http://www.epa.state.il.us/air/forms.

Note that the request to revise the permit must be certified for truth, accuracy, and completeness by a responsible official.

Note that failure to submit the required information may require the Illinois EPA to deny the application. The Illinois EPA reserves the right to require that additional information be submitted as needed to evaluate or take final action on applications pursuant to Section 39.5(5)(g) of the Act and 35 IAC 270.305.

Illinois Environmental Protection Agency
Division Of Air Pollution Control -- Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

Application For Construction Permit (For CAAPP Sources Only)	For Illinois EPA use only
	I.D. number:
	Permit number:
	Date received:

This form is to be used by CAAPP sources to supply information necessary to obtain a construction permit. Please attach other necessary information and completed CAAPP forms regarding this construction/modification project.

Source Information		
1. Source name:		
2. Source street address:		
3. City:		4. Zip code:
5. Is the source located within city limits?		☐ Yes ☐ No
6. Township name:	7. County:	8. I.D. number:

Owner Information		
9. Name:		
10. Address:		
11. City:	12. State:	13. Zip code:

Operator Information (if different from owner)		
14. Name		
15. Address:		
16. City:	17. State:	18. Zip code:

Applicant Information	
19. Who is the applicant? ☐ Owner ☐ Operator	20. All correspondence to: (check one) ☐ Owner ☐ Operator ☐ Source
21. Attention name and/or title for written correspondence:	
22. Technical contact person for application:	23. Contact person's telephone number:

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Summary Of Application Contents		
24.	Does the application address whether the proposed project would constitute a new major source or major modification under each of the following programs: a) Non-attainment New Source Review – 35 IAC Part 203; b) Prevention of Significant Deterioration (PSD) – 40 CFR 52.21; c) Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources – 40 CFR Part 63?	☐ Yes ☐ No
25.	Does the application identify and address all applicable emissions standards, including those found in the following: a) Board Emission Standards – 35 IAC Chapter I, Subtitle B; b) Federal New Source Performance Standards – 40 CFR Part 60; c) Federal Standards for Hazardous Air Pollutants – 40 CFR Parts 61 and 63?	☐ Yes ☐ No
26.	Does the application include a process flow diagram(s) showing all emission units and control equipment, and their relationship, for which a permit is being sought?	☐ Yes ☐ No
27.	Does the application include a complete process description for the emission units and control equipment for which a permit is being sought?	☐ Yes ☐ No
28.	Does the application include the information as contained in completed CAAPP forms for all appropriate emission units and air pollution control equipment, listing all applicable requirements and proposed exemptions from otherwise applicable requirements, and identifying and describing any outstanding legal actions by either the USEPA or the Illinois EPA? Note: The use of "APC" application forms is not appropriate for applications for CAAPP sources. CAAPP forms should be used to supply information.	☐ Yes ☐ No
29.	If the application contains TRADE SECRET information, has such information been properly marked and claimed, and have two separate copies of the application suitable for public inspection and notice been submitted, in accordance with applicable rules and regulations?	☐ Yes ☐ No ☐ Not Applicable, No TRADE SECRET information in this application

Note 1: Answering “No” to any of the above may result in the application being deemed incomplete.

Signature Block	
	This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.
30.	I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete. Authorized Signature: BY: _____ AUTHORIZED SIGNATURE _____ TITLE OF SIGNATORY _____ TYPED OR PRINTED NAME OF SIGNATORY _____ / _____ / _____ DATE

Note 2: An operating permit for the construction/modification permitted in a construction permit must be obtained by applying for the appropriate revision to the source’s CAAPP permit, if necessary.

10.5 Attachment 5 - Guidance on Renewing This Permit

Timeliness - Pursuant to Section 39.5(5)(n) of the Act and 35 IAC 270.301(d), a source must submit to the Illinois EPA a complete CAAPP application for the renewal of a CAAPP permit not later than 9 months before the date of permit expiration of the existing CAAPP permit in order for the submittal to be deemed timely. Note that the Illinois EPA typically sends out renewal notices approximately 18 months prior to the expiration of the CAAPP permit.

The CAAPP application must provide all of the following information in order for the renewal CAAPP application to be deemed complete by the Illinois EPA:

1. A completed renewal application form 200-CAAPP, APPLICATION FOR CAAPP PERMIT.

2. A completed compliance plan form 293-CAAPP, COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE FOR CAAPP PERMIT.

3. A completed compliance certification form 296-CAAPP, COMPLIANCE CERTIFICATION, signed by the responsible official.

4. Any applicable requirements that became effective during the term of the permit and that were not included in the permit as a reopening or permit revision.

5. If this is the first time this permit is being renewed and this source has not yet addressed CAM, the application should contain the information on form 464-CAAPP, COMPLIANCE ASSURANCE MONITORING (CAM) PLAN.

6. Information addressing any outstanding transfer agreement pursuant to the ERMS.

7. a. If operations of an emission unit or group of emission units remain unchanged and are accurately depicted in previous submittals, the application may contain a letter signed by a responsible official that requests incorporation by reference of existing information previously submitted and on file with the Illinois EPA. This letter must also include a statement that information incorporated by reference is also being certified for truth and accuracy by the responsible official’s signing of the form 200-CAAPP, APPLICATION FOR CAAPP PERMIT and the form 296-CAAPP, COMPLIANCE CERTIFICATION. The boxes should be marked yes on form 200-CAAPP, APPLICATION FOR CAAPP PERMIT, as existing information is being incorporated by reference.

   b. If portions of current operations are not as described in previous submittals, then in addition to the information above for operations that remain

unchanged, the application must contain the necessary information on all changes, e.g., discussion of changes, new or revised CAAPP forms, and a revised fee form 292-CAAPP, FEE DETERMINATION FOR CAAPP PERMIT, if necessary.

8. Information about all off-permit changes that were not prohibited or addressed by the permit to occur without a permit revision and the information must be sufficient to identify all applicable requirements, including monitoring, recordkeeping, and reporting requirements, for such changes.

9. Information about all changes made under 40 CFR 70.4(b)(12)(i) and (ii) that require a 7-day notification prior to the change without requiring a permit revision.

The Illinois EPA will review all applications for completeness and timeliness. If the renewal application is deemed both timely and complete, the source shall continue to operate in accordance with the terms and conditions of its CAAPP permit until final action is taken on the renewal application.

Notwithstanding the completeness determination, the Illinois EPA may request additional information necessary to evaluate or take final action on the CAAPP renewal application. If such additional information affects your allowable emission limits, a revised form 292-CAAPP, FEE DETERMINATION FOR CAAPP PERMIT must be submitted with the requested information. The failure to submit to the Illinois EPA the requested information within the time frame specified by the Illinois EPA, may force the Illinois EPA to deny your CAAPP renewal application pursuant to Section 39.5 of the Act.

Application forms may be obtained from the Illinois EPA website at http://www.epa.state.il.us/air/forms.html.

If you have any questions regarding this matter, please contact a permit analyst at 217/782-2113.

Mail renewal applications to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

10.6 Attachment 6 - Equations

Development of equations for extrapolating NMMA emission factors to calculate styrene and methyl methacrylate (MMA) emissions from the application of gelcoats and resins to boat hulls and decks considering varying boat length and other variables

The NMMA emission factors for resin and gel coat application to boat hulls are based on test data for two boat lengths of 18 feet and 28 feet. To derive emission factors for the application of resin and gelcoat to boats hulls of other lengths (between 18 and 28 feet, or greater than 28 feet) an equation can be easily developed using these two data points. However, the NMMA emission factors for application of resin and gelcoat to boat decks were based on test data limited to only a single boat length of 18 feet. Since two points are required in order to create an equation for purposes of interpolating or extrapolating emission factors for boat decks of varying lengths, the second point (emission factor for a 28 foot boat deck) had to be artificially derived by assuming that the rate at which emissions increase from resin and gelcoat application to an 18 foot versus a 28 foot boat deck is the same as the rate at which emissions increase for resin and gel coat application between an 18 foot and a 28 foot boat hull. By assuming that the slope from the graph created by plotting the emissions for an 18-foot versus a 28 foot hull is the same as the slope of the graph for application of resin and gelcoat to boat decks, the emission value for a 28 foot boat can be derived. This is referred to as the “point/slope” method of deriving an equation from a single point and a known slope of the corresponding graph.

Similarly, the NMMA emission factors were developed from test data that was limited to only two values of styrene content in resins. Consequently, another set of equations had to be developed to take this variable factor into account in order to derive emission factors for resins of varying styrene content.

Finally, yet another set of equations had to be developed to take into account different application methods (air atomized versus low pressure, non-atomized, or flow coat-type of application).

The tables, graphs and equations that follow demonstrate the detailed step-by-step procedure used to derive the various equations necessary to properly take into account all of the variables (boat length, hulls vs. decks, varying styrene and MMA contents and method of application) that affect the extrapolation of emission factors from the limited number of data points upon which the NMMA factors are based.

Exhibit 1a of Attachment 6

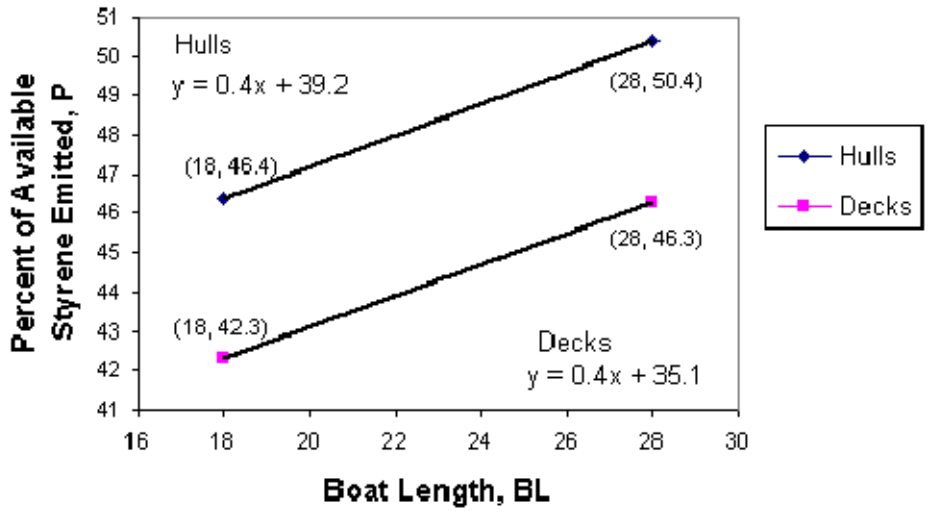
Extrapolation of Emission Factors for Gelcoat Application

Description	Styrene Emissions As Percent of Available Styrene, P
18 ft Hull	46.4%
28 ft Hull	50.4%
18 ft Deck	42.3%
28 ft Deck	46.3%

The NMMA report showed only one emission value for application to decks. This was for an 18 foot deck. Two data points are required to develop an emission factor equation based on boat length. The value of 46.3% for the 28 foot deck was derived by assuming the increase in the amount of emissions from an 18 foot deck to a 28 foot deck is similar to that of an 18 foot hull to a 28 foot hull. That is, the slopes of the line connecting the data points for hulls was the same as that for decks and a second emission data point for 28 foot

Boat Length, BL	Percent Emitted, P	
	Hulls	Decks
18	46.4	42.3
28	50.4	46.3

Figure 1.
Graph for Deriving Extrapolated Emission Factors to Calculate Styrene Emissions from Gelcoat Application for Boat Hulls and Decks at Variable Lengths.



Summary of Emissions Equations Derived for Resin Application

Table 3. MMA Emissions Data from Table2-1, NMMA Baseline Emissions Report

The NMMA report showed only one emission value for application to decks. This was for an 18 foot deck. Two data points are required to develop an emission factor equation based on boat length. The value of 81.0% for the 28 foot deck was derived by assuming the increase in the amount of emissions from an 18 foot deck to a 28 foot deck is similar to that of an 18 foot hull to a 28 foot hull. That is, the slope of the lines connecting the data points for hulls was the same as that for decks and a second emission data point for 28 foot decks was obtained. See Figure 2 below.

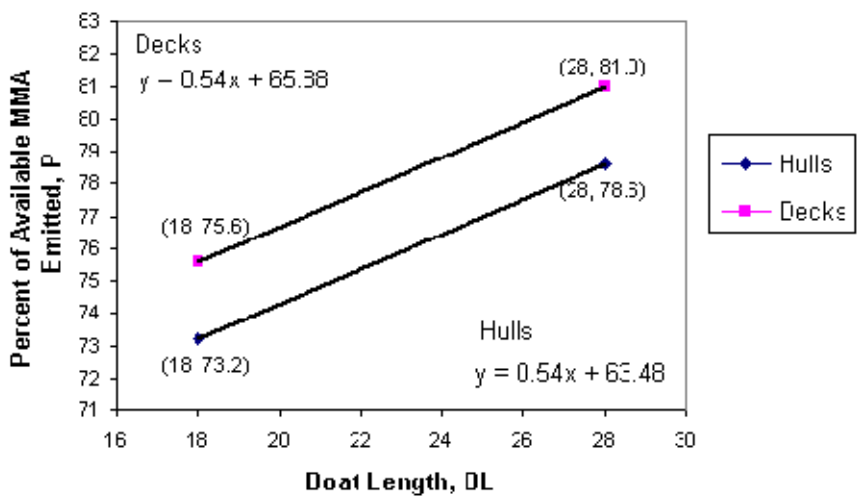
Description	MMA Emissions As Percent of Available MMA, P
18 ft Hull	73.2%
28 ft Hull	78.6%
18 ft Deck	75.6%
28 ft Deck	81.0%

Table 4. Coordinates for Graph (Shown in Figure 2)

Boat Length, BL	Percent Emitted, P	
	Hulls	Decks
18	73.2	75.6
28	78.6	81.0

From equation (1) shown in section 7.1.12(d)(i) of the permit,
F = P/100

Figure 2.
Graph for Deriving Extrapolated Emission Factors to Calculate MMA Emissions from Gelcoat Application for Boat Hulls and Decks at Variable Lengths.



Demonstration of How Emission Equations Shown in Figures 1 and 2 Were Derived.

The equations shown in Figures 1 and 2 were derived using the slope intercept method of deriving an equation from two data points. An example of this method of derivation is shown below:

Example:

Styrene Emissions from the application of Gelcoat on Hulls

Boat Length, BL (x)	Percent Emitted, P (y)
18	46.4
28	50.4

Derive the slope of the function, m.

Given: $y = mx + b$

Then: $m = (y_2-y_1)/(x_2-x_1)$

$m = (50.4 - 46.4)/(28-18) = 0.4$

Use a single data point and the slope, m, to derive the y-intercept, b.

$b = y_1 - mx_1$

$b = 46.4 - 0.4(18) = 39.2$

Therefore,

$P = 0.4BL + 39.2$

Table 5. Summary of Equations Developed from Figures 1 and 2.

Styrene	MMA
Equation for Hulls: Percent Emitted P = 0.4 BL + 39.2	Equation for Hulls: Percent Emitted P = 0.54 BL + 63.48
Equation for Decks: Percent Emitted P = 0.4 BL + 35.1	Equation for Decks: Percent Emitted P = 0.54 BL + 65.88

Where:

P = Percent of Available Emitted
BL = Boat Length (feet)

From equation (1) shown in section 7.1.12(d)(i) of the permit,
F = P/100

Exhibit 2a of Attachment 6

Data Used for Extrapolation Method of Deriving Styrene Emission Equations for Resin Application (Atomized Spray and Flow Coat)

Table 6. Emissions Data from Table 2-1, NMMA Baseline Emissions Report

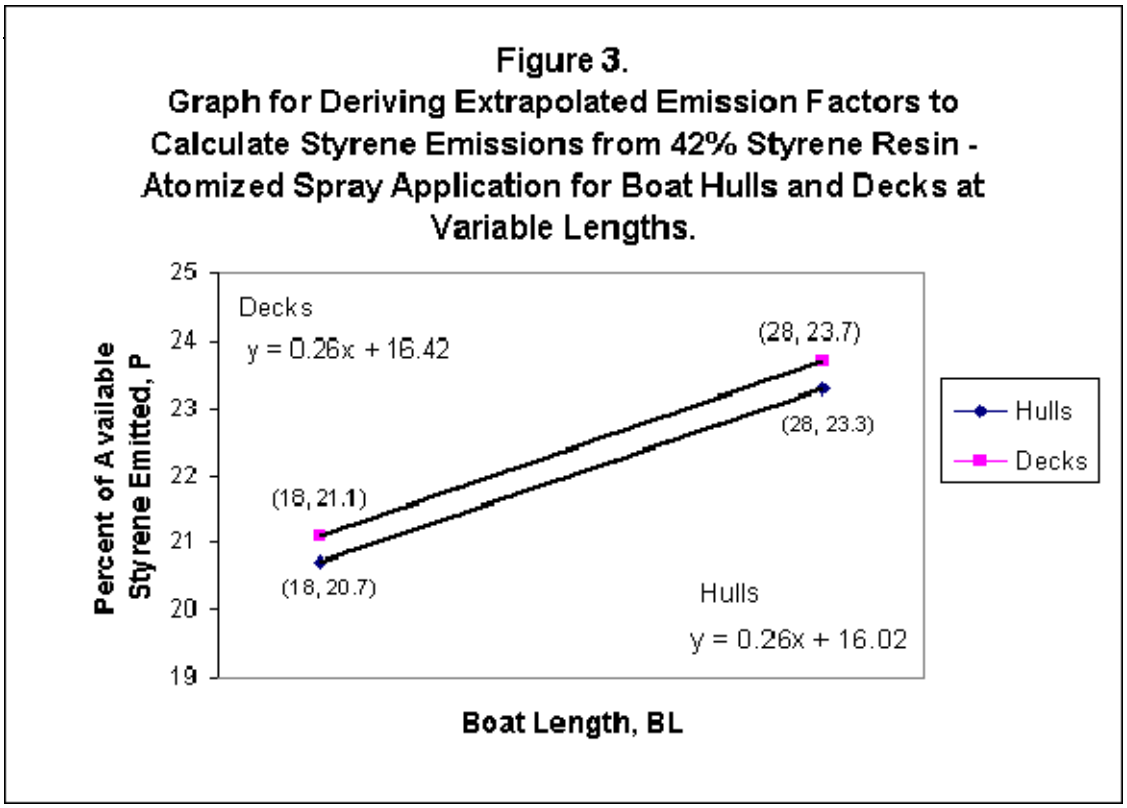
Using 42% Available Styrene Resin Atomized Spray		Using 42% Available Styrene Resin Flow Coat	
Description	Emissions As Percent of Available Styrene	Description	Emissions As Percent of Available Styrene
18 ft Hull	20.7%	18 ft Hull	11.4%
28 ft Hull	23.3%	28 ft Hull	14.0%[2]
18 ft Deck	21.1%	18 ft Deck	13.4%
28 ft Deck	23.7%[1]	28 ft Deck	16.0%[2]

Using 35% Available Styrene Resin Atomized Spray		Using 35% Available Styrene Resin Flow Coat	
Description	Emissions As Percent of Available Styrene	Description	Emissions As Percent of Available Styrene
18 ft Hull	14.8%	18 ft Hull	10.8%
28 ft Hull	17.3%	28 ft Hull	13.3%[2]
18 ft Deck	12.9%	18 ft Deck	11.9%
28 ft Deck	15.4%[1]	28 ft Deck	14.4%[2]

Exhibit 2b of Attachment 6
Styrene Emissions from Resin Application Using Atomized Spray

Table 7. Coordinates for Graph - 42% Resin, Atomized Spray (Shown in Figure 3)

Boat Length, BL	Percent Emitted, P	
	Hulls	Decks
18	20.7	21.1
28	23.3	23.7



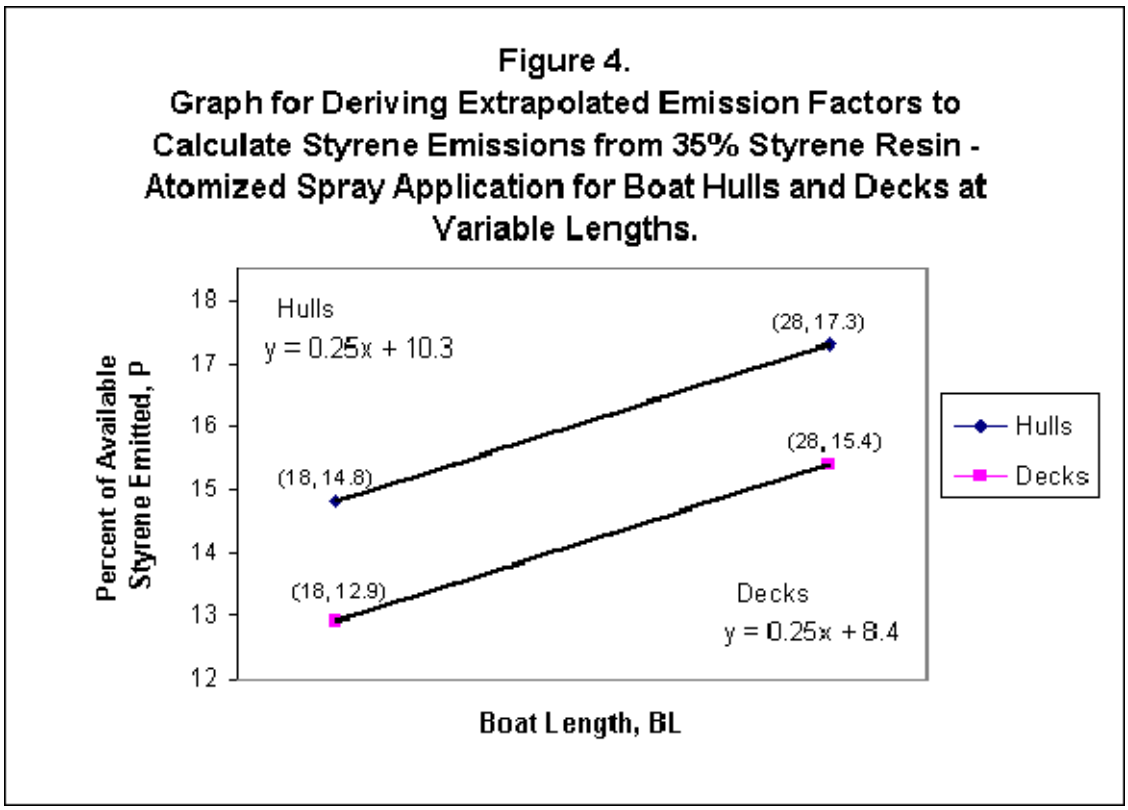
From equation (1) shown in section 7.1.12(d)(i) of the permit,
F = P/100

Equation for Hulls: Percent Emitted (P)	Equation for Decks: Percent Emitted (P)
P = 0.26 BL + 16.02	P = 0.26 BL + 16.42

These Equations are derived using linear regression, or the slope intercept method of deriving an equation from two data points. An example of this derivation is presented in Exhibit 1b.

Table 8. Coordinates for Graph - 35% Resin, Atomized Spray (Shown in Figure 4)

Boat Length, BL	Percent Emitted, P	
	Hulls	Decks
18	14.8	12.9
28	17.3	15.4



From equation (1) shown in section 7.1.12(d)(i) of the permit,
F = P/100

Equation for Hulls: Percent Emitted	Equation for Decks: Percent Emitted
P = 0.25 BL + 10.3	P = 0.25 BL + 8.4

These Equations are derived using linear regression, or the slope intercept method of deriving an equation from two data points. An example of this derivation is presented in Exhibit 1.

Table 9. Summary of Equations for Atomized Spray Application of Resins Developed from Figures 3 and 4 Presented as Functions of Boat Length.

35% Styrene Resin

Equation for Hulls: Percent Emitted	Equation for Decks: Percent Emitted
P = 0.25 BL + 10.3	P = 0.25 BL + 8.4

42% Styrene Resin

Equation for Hulls: Percent Emitted	Equation for Decks: Percent Emitted
P = 0.26 BL + 16.02	P = 0.26 BL + 16.42

From equation (1) shown in section 7.1.12(d)(i) of the permit,
F = P/100

In order to obtain a Percent Styrene Emitted equation as a function not only of Boat Length, (BL), but also of the Styrene content of the Resin used, (ST%), a second set of equations are derived using the slope-intercept method. These equations are derived using the existing equations (listed above) as the values for y_1 and y_2 and the Styrene content percentages 35% and 42% as x_1 and x_2.

Hulls - Atomized		Decks - Atomized	
Percent Styrene, ST% (x)	Percent Emitted, P (y)	Percent Styrene, ST% (x)	Percent Emitted, P (y)
35	0.25BL + 10.3	35	0.25BL + 8.4
42	0.26BL + 16.02	42	0.26BL + 16.42

Given: y = mx + b (Same procedure as for Hulls)

$m = (y_2-y_1)/(x_2-x_1)$

m = ((0.26BL + 16.02) - (0.25BL + 10.3))/(42-35)

m = (0.01BL + 5.72)/7

$b = y_2 - mx_2 = (0.26 + 16.02) - ((0.01\ BL + 5.72)/7)(42)$

$b = 0.2\ BL - 18.3$

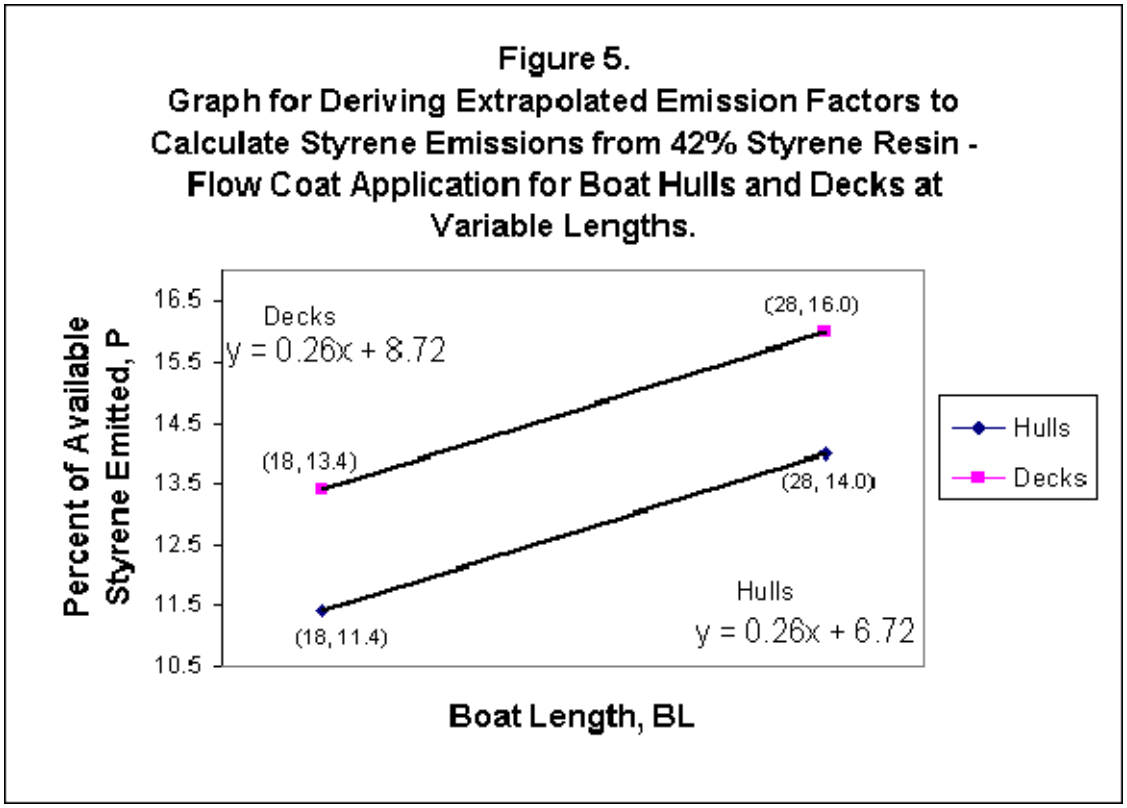
$P = (((0.01\ BL + 5.72)/7)ST\% + (0.2\ BL-18.3))$

Exhibit 2c of Attachment 6

Styrene Emissions from Resin Application Using Flow Coat

Table 10. Coordinates for Graph - 42% Resin, Flow Coat (Shown in Figure 5)

Boat Length, BL	Percent Emitted, P	
	Hulls	Decks
18	11.4	13.4
28	14.0	16.0



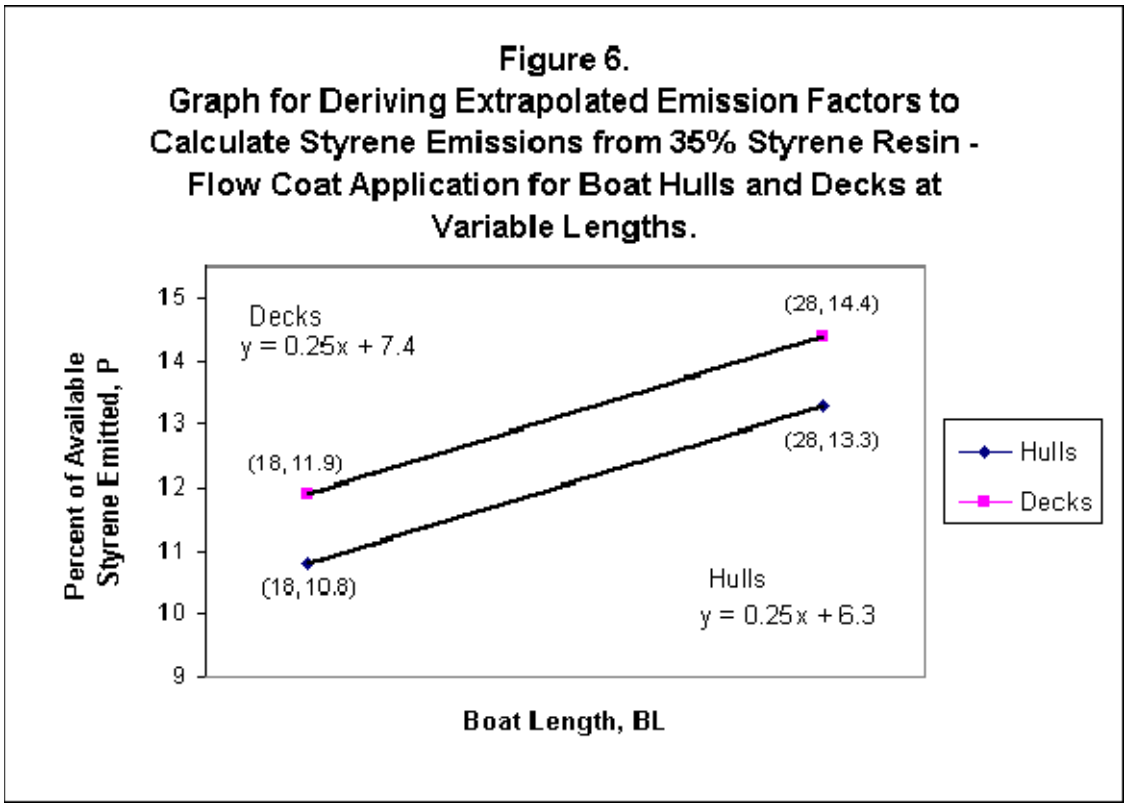
From equation (1) shown in section 7.1.12(d)(i) of the permit,
$F = P/100$

Equation for Hulls: Percent Emitted	Equation for Decks: Percent Emitted
$P = 0.26\ BL + 6.72$	$P = 0.26\ BL + 8.72$

These Equations are derived using linear regression, or the slope intercept method of deriving an equation from two data points. An example of this derivation is presented in Exhibit 1.

Table 11. Coordinates for Graph - 42% Resin, Flow Coat
(Shown in Figure 6)

Boat Length, BL	Percent Emitted, P	
	Hulls	Decks
18	10.8	11.9
28	13.3	14.4



From equation (1) shown in section 7.1.12(d)(i) of the permit,
F = P/100

Equation for Hulls: Percent Emitted	Equation for Decks: Percent Emitted
P = 0.25 BL + 6.3	P = 0.25 BL +7.4

These Equations are derived using linear regression, or the slope intercept method of deriving an equation from two data points. An example of this derivation is presented in Exhibit 1.

Table 12. Summary of Equations for Flow Coat Application of Resins Developed from Figures 5 and 6 Presented as Functions of Boat Length.

35% Styrene Resin

Equation for Hulls: Percent Emitted	Equation for Decks: Percent Emitted
P = 0.25 BL + 6.3	P = 0.25 BL + 7.4

42% Styrene Resin

Equation for Hulls: Percent Emitted	Equation for Decks: Percent Emitted
P = 0.26 BL + 6.72	P = 0.26 BL + 8.72

From equation (1) shown in section 7.1.12(d)(i) of the permit, F = P/100

In order to obtain a Percent Styrene Emitted equation as a function not only of Boat Length, (BL), but also of the Styrene content of the Resin used, (ST%), a second set of equations are derived using the slope-intercept method. These equations are derived using the existing equations (listed above) as the values for y_1 and y_2 and the Styrene content percentages 35% and 42% as x_1 and x_2.

Hulls - Atomized		Decks - Atomized	
Percent Styrene, ST% (x)	Percent Emitted, P (y)	Percent Styrene, ST% (x)	Percent Emitted, P (y)
35	0.25 BL + 6.3	35	0.25 BL + 7.4
42	0.26 BL + 6.72	42	0.26 BL + 8.72

Given: y = mx + b (Same procedure as for Hulls)

$m = (y_2-y_1)/(x_2-x_1)$

m = ((0.26 BL + 6.72) - (0.25 BL + 6.3))/(42-35)

m = (0.01 BL + 0.42)/7

$b = y_2 - mx_2$ = (0.26 + 6.72) - ((0.01 BL + 0.42)/7)(42)

b = 0.2 BL - 4.2

P = (((0.01 BL + 0.42)/7)ST% + (0.2 BL-4.2))

Exhibit 2d of Attachment 6

Summary of Emissions Equations Derived for Resin Application

Table 13. Equations for the Percent of Styrene Emitted from the Use of Resin

Atomized Spray	Flow Coat
Equation for Hulls: % Emitted	Equation for Hulls: % Emitted
P = ((0.01 BL + 5.72)/7) ST % + (0.2 BL – 18.3)	P = ((0.01 BL + 0.42)/7) ST % + (0.2 BL + 4.2)
Equation for Decks: % Emitted	Equation for Decks: % Emitted
P = ((0.01 BL + 8.02)/7) ST % + (0.2 BL – 31.7)	P = ((0.01 BL + 1.32)/7) ST % + (0.2 BL + 0.8)

Where:

P = Percent of Available Emitted

BL = Boat Length (feet)

ST% = Percent of Available Styrene in the Resin

From equation (1) shown in Section 7.1.12(d)(i) of the permit, F = P/100

SIS:psj