



**TECHNICAL REVIEW AND EVALUATION  
OF APPLICATION FOR  
AIR QUALITY PERMIT No. 93272**

**I. INTRODUCTION**

This Class II synthetic minor Renewal permit is for continued operation of Davis Boat Manufacturing – Nordic, Inc’s boat manufacturing facility. Permit No. 93272 renews and supersedes Permit No. 65651. A Class II synthetic minor permit is required because the facility has potential to emit (PTE), without the controls or operating limitations specified in this permit, hazardous air pollutant emissions in excess of major source thresholds.

**A. Company Information**

Facility Name: Davis Boat Manufacturing – Nordic, Inc.

Mailing Address: 900 North Lake Havasu Avenue

Lake Havasu City, AZ 86403

Mohave County

Facility Location: 770 North Lake Havasu Avenue

Lake Havasu City, AZ 86403

**B. Attainment Classification**

Mohave County is in attainment with respect to all criteria pollutants.

**II. PROCESS DESCRIPTION**

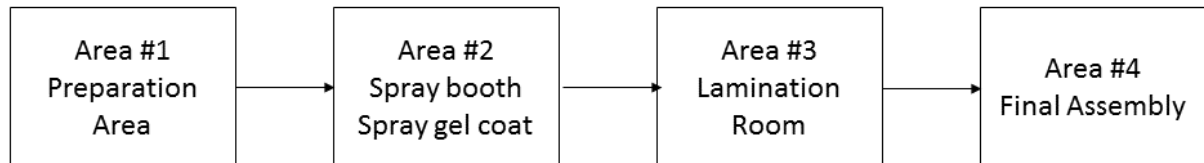
**A. Process Equipment**

Davis Boat Manufacturing – Nordic, Inc. is a boat manufacturing facility. The boat manufacturing process starts with the facility preparing the molds needed to produce all of the parts to assemble the boat. In the spray booth, a gel coat is applied with a spray gun into an open mold utilizing a controlled spray application process. The gel coat process can include multiple colors for a single unit and takes seven days to complete.

Then the lamination process follows in the lamination room. During lamination, the resin is applied by a non-atomized wet gun producing various layers of fiberglass covered with resin. The lamination process must take place within 12 hours of the gel coat application and takes six days to complete. After the resin is applied, the various pieces are pulled from the mold and then assembled into the boat. The final assembly takes three days.

**B. Process Flow Diagram**

A flow chart for the process is displayed in Figure 1 below.



**Figure 1 - Flow Chart Adapted from Davis Boat Manufacturing Renewal Application**

**III. COMPLIANCE HISTORY**

The facility was inspected three (3) times during the last permit term on November 3, 2017, August 28, 2019, and August 18, 2020. The inspections did not result in any violations of the permit.

During the last permit term, the facility submitted four (4) annual compliance certifications to the ADEQ certifying compliance with the permit. The report reviews did not document any violations of the permit.

**IV. EMISSIONS**

Davis Boat Manufacturing has the potential-to-emit (PTE) styrene. Styrene is classified as a hazardous air pollutant (HAP) and it is a volatile organic compound (VOC).

To determine the styrene emissions, the *Unified Emission Factors for Open Molding of Composites* (2001) was used. The styrene content % for the resin and gel coat and the corresponding method are used to determine what unified emission factor (UEF) in the table is applicable. The gel coat application process corresponds to the gel coat-controlled spray application method and the lamination process corresponds to the mechanical non-atomized method.

Then, the amount of material used per unit was determined using the volume and weight of the material. The styrene content was then determined by multiplying by the corresponding UEF and the total units processed per year. Since the average time to complete the gel coat application per unit is 7 days and the production on the next unit cannot start until after the lamination process has finished on the first unit, the assumption was made that the facility would operate 365 days a week and that it would take 7 days to produce each unit.

The facility has a potential-to-emit (PTE) more than the major source thresholds of styrene without an elective limit. The facility's PTE is provided in Table 1 below:

**Table 1: Potential to Emit (tpy)**

Pollutant	PTE	Significant Thresholds
Styrene (VOC/HAPs)	2.67	10 (single)/ 25 (combined)

**V. MINOR NEW SOURCE REVIEW (NSR)**

Minor new source review is required if the emissions of any physical change or change in the method of an operation of an emission unit or stationary source that results in an increase in emissions of any regulated minor NSR pollutant by an amount equal to or greater than the permitting exemption threshold. This permit renewal application does not propose to make any changes that would increase potential to emit in excess of the permitting exemption thresholds. As a result, minor NSR does not apply.

**VI. VOLUNTARILY ACCEPTED EMISSION LIMITATIONS AND STANDARDS**

The permit contains the following voluntary emission limitations and standards:

**A. Operational Limits (Att. “B”, Condition I.A)**

The facility has accepted a voluntary emission limit of 9.0 tons per year of styrene over a 12-month rolling period to avoid requiring a Class I Permit. The limit was incorporated into Installation Permit No. 36692 issued in 2006.

**VII. APPLICABLE REGULATIONS**

Table 2 identifies applicable regulations and verification as to why that standard applies. The table also contains a discussion of any regulations the emission unit is exempt from.

**Table 2: Applicable Regulations**

Unit & year	Control Device	Rule	Discussion
Spray Booth	96% control efficiency	A.A.C. R-18-2-727	Standards of Performance for Spray Painting Operations
Lamination Room	None	A.A.C. R-18-2-730	Standards of Performance for Unclassified Sources
Fugitive dust sources	Water Trucks, Dust Suppressants	A.A.C. R18-2 Article 6 A.A.C. R18-2-702	These standards are applicable to all fugitive dust sources at the facility.

**Table 2: Applicable Regulations**

Unit & year	Control Device	Rule	Discussion
Abrasive Blasting	Wet blasting; Dust collecting equipment; Other approved methods	A.A.C. R-18-2-702 A.A.C. R-18-2-726	These standards are applicable to any abrasive blasting operation.
Spray Painting	Enclosures	A.A.C. R18-2-702 A.A.C. R-18-2-727	These standards are applicable to any spray painting operation.
Demolition/renovation Operations	N/A	A.A.C. R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.

**VIII. PREVIOUS PERMIT REVISIONS AND CONDITIONS**

Table 3 addresses the changes made to the sections and conditions from Permit No. 65651:

**Table 3: Previous Permit Conditions**

Section No.	Determination			Comments
	Added	Revised	Deleted	
Att. "A"		X		General Provisions: Revised to represent the most recent template language
Att. "B" Section I		X		Facility Wide Requirements: The Requirement to have on site or on call a person certified in EPA Reference Method 9 has been removed. Styrene is a colorless gas and does not present opacity issues. The facility has no fugitive dust producing activities that need opacity monitoring. Revised to represent the most recent template language
Att. "B" Section II		X		Spray Room Requirements: Removed Method 9 Opacity Requirements
Att. "B" Section III		X		Lamination Room Requirements: Removed Method 9 Opacity Requirements
Att. "B" Section IV		X		Fugitive Dust Requirements: Revised to represent the most recent template language. Removed Method 9 Opacity Requirements
Att. "B" Section V			X	Mobile Source Requirements: Removed from permit because the requirements did not apply to the facility.

**Table 3: Previous Permit Conditions**

Section No.	Determination			Comments
	Added	Revised	Deleted	
Att. "B" Section V		X		Other Periodic Activities: Revised to represent the most recent template language. Formerly Section VI of Permit No. 65651

**IX. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS**

Table 4 contains an inclusive but not an exhaustive list of the monitoring, recordkeeping and reporting requirements prescribed by the air quality permit. The table below is intended to provide insight to the public for how the Permittee is required to demonstrate compliance with the emission limits in the permit.

**Table 4: Permit No. 93272**

<b>Emission Unit</b>	<b>Pollutant</b>	<b>Emission Limit</b>	<b>Monitoring Requirements</b>	<b>Recordkeeping Requirements</b>	<b>Reporting Requirements</b>
Facility Wide	Styrene	9.0 tpy	Calculate a monthly total and a rolling twelve-month total of styrene emissions based on the usage records and corresponding styrene content.	Maintain weekly records of gel coat and resin usage in pounds per week along with the corresponding percent styrene content of each material used.	N/A
			N/A	Retain all Safety Data Sheets (SDS) used in calculating the styrene emissions.	N/A
Fugitive Dust	PM	40% Opacity	N/A	Record of the dates and types of dust control measures employed,	N/A
Abrasive Blasting	PM	20% Opacity	N/A	Record the date, duration and pollution control measures of any abrasive blasting project.	N/A
Spray Painting	VOC	20% Opacity	N/A	Maintain records of the date, duration, quantity of paint used, any applicable MSDS, and pollution	N/A

**Table 4: Permit No. 93272**

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
		Control 96% of the overspray		control measures of any spray painting project.	
Demolition/ Renovation	Asbestos	N/A	N/A	Maintain records of all asbestos related demolition or renovation projects including the “NESHAP Notification for Renovation and Demolition Activities” form and all supporting documents	N/A

**X. LEARNING SITE EVALUATION**

In accordance with ADEQ’s Environmental Permits and Approvals near Learning Sites Policy, the Department is required to conduct an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

This renewal will not result in any increase in emissions as there are no changes to any equipment. Hence the facility is exempt from the learning sites evaluations.

**XI. LIST OF ABBREVIATIONS**

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ARM	Ambient Ratio Method
A.R.S.	Arizona Revised Statutes
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
HAP	Hazardous Air Pollutant
NAAQS	National Ambient Air Quality Standard
PTE	Potential to Emit
SDS	Safety Data Sheets
TPY	Tons per Year
UEF	Unified Emission Factor
VOC	Volatile Organic Compound
yr	Year