

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1624-AOP-R4 AFIN: 03-00081

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Challenger, Inc. (Bass Cat Boats & Yar-Craft Boats)  
Highway 126 Industrial Park  
Mountain Home, Arkansas 72653

3. PERMIT WRITER:

Kimberly O'Guinn

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Boat Building  
NAICS Code: 336612

5. SUBMITTALS:

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
8/28/2013	Renewal	

6. REVIEWER'S NOTES:

Challenger, Inc. (dba Bass Cat Boats & Yar-Craft Boats) operates a custom fiberglass fishing boat manufacturing facility located at Highway 126 Industrial Park, Mountain Home, Baxter County, Arkansas. This modification is to renew the facility's existing air permit. There are no changes in permitted emission rates at this time.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

There are no current or pending CAO's.

8. PSD APPLICABILITY:

- a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
- b) Is the facility categorized as a major source for PSD? N
  - *Single pollutant  $\geq 100$  tpy and on the list of 28 or single pollutant  $\geq 250$  tpy and not on list, or*

If yes, explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
Facility	HAPs	NESHAP Subpart VVVV
Facility	HAPs	NESHAP Subpart MMMM

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. NAAQS EVALUATIONS AND NON-CRITERIA POLLUTANTS:

a) NAAQS:

This permit decision did not involve an Arkansas Department of Pollution Control & Ecology Regulation 19, Chapter 9 permit (PSD) requiring dispersion modeling.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Department procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1<sup>st</sup> Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value ( $\text{mg}/\text{m}^3$ ), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acetone	1187.12	130.58	55.07	Yes
Styrene	85.20	9.37	76.79	No
Methyl Methacrylate (MMA)	204.76	22.52	3.60	Yes

2<sup>nd</sup> Tier Screening (PAIL)

There were no permitted emission changes with this modification, Permit #1624-AOP-R4, therefore modeling was not performed. The following modeling information is based on a previous model.

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL (µg/m <sup>3</sup> ) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m <sup>3</sup> )	Pass?
Styrene*	852.02	3741.72	N

The 76.79 lb/hr emission rate is based on 24 hour throughput using the worst case coating. However, the permit limits the number of boats to four boats per day. Since the amount of styrene is directly related to the number of boats a less conservative but still valid emission rate can be derived. The following table lists the information used to derive an alternate emission rate.

Material Usage Per Boat				
Material	Amount (lb/boat)	Styrene Content in Coating wt%	Wt% of Styrene expected to Volatize	Total Styrene Emissions lb/boat
Resin	871	35	4	12.194
Pigmented Gel Coat	185.25	33	4	2.4453
Clear Gel Coat	61.75	48	6	1.7784
Totals	1118			16.4177

Since the facility is limited to four boats per day, the hourly emission limit based on a 24 hour period is 2.74 lb/hr. AERMOD air dispersion modeling passes PAIL with a predicted maximum offsite concentration of 133.32 micrograms per cubic meter.

Other Modeling:

Odor:

Odor modeling for sources emitting styrene.

Pollutant	Threshold value 1-hour average	Modeled Concentration ( $\mu\text{g}/\text{m}^3$ )	Pass?
Styrene*	1361 $\mu\text{g}/\text{m}^3$	1973	N

Odor modeling was performed and the ISCST3 air dispersion modeling predicted a maximum offsite 1-hour concentration of 1973 micrograms per cubic meter. The model predicts an exceedance, but it is recommended that this not be an issue due to the following:

1. The facility is limited to 4 boats per day, and the material usage estimate per boat is conservative.
2. The facility is located in an industrial park.
3. At distances greater than 200 meters from the facility, the concentration of styrene is below the odor 1-hour limit.
4. The local air inspector reports there have been no complaints for odors against the facility.

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01, 02, 03 06, 07	MSDS % VOC/HAP and actually usage  AP-42 4.12-2 <sup>1</sup>  MMA – UEFOMC Catalyst  Mass Balance	960 lb/hr resin 1,272,000 lb resin/yr max Styrene 0.11 EF resin <sup>1</sup>  480 lb/hr Gelcoat 360,000 lb Gelcoat/yr max Styrene 0.305 EF gelcoat <sup>1</sup>  Catalyst 3% max	N/A	N/A	480 lb/hr resin/gun 2 guns simultaneously = NTE 960 lb/hr resin  240 lb/hr gelcoat/gun 2 guns simultaneously = NTE 480 lb/hr gelcoat  UEFOMC – United EF for Open Molding Composites, July 23, 2001

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
04	AP-42 Table 13.2.6-1 Abrasive Blasting	PM <sub>10</sub> : 13 lb/1,000 lb abrasive	N/A	N/A	Limit 36,000 lbs sand/ rolling 12 months

13. TESTING REQUIREMENTS:

The permit requires no testing.

14. MONITORING OR CEMS:

No CEMS or other monitoring equipment is required.

15. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
Facility	Resin Usage	1,272,000 pounds/yr	Monthly	No
Facility	Gelcoat Usage	360,000 pounds/yr	Monthly	No
Facility	Foam Usage	120,000 pounds/yr	Monthly	No
Facility	Solvent / Thinner / Adhesive / Mold release / Wax / Other	96,000 pounds/yr	Monthly	No
Facility	Paint and Primer	4,000 gallons/yr	Monthly	No
Facility	Acetone Usage	15,000 gallons/yr	Monthly	No
Facility	Sand Usage	36,000 pounds/yr	Monthly	No
Facility	Boat Production	4 Boats / Day	Daily	No
Facility	Paint mixture formulations content limit	6.5 lb/gal VOC & HAP as applied	On-going	N
Facility	VOC	114.1 tpy	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
Facility	Total HAP (excluding Styrene & MMA)	21.50 tpy	Monthly	Y
Facility	Single HAP	9.00 tpy	Monthly	Y
Facility	MMA	3.60 tpy	Monthly	Y
Facility	Styrene	56.68 tpy	Monthly	Y
Facility	Material HAP content	Content Table – MSDS	On-going	N
Facility	MSDS	Styrene: 48% MMA: 10% Tetrafluoroethane: 10% Pentafluoropropane: 10% Combined HAPs: 22%	On-going	N
Facility	Subpart M M M M Required Records	27.5 lb Hap / lb solid	Varies	Y
Facility	HAP emissions	2.6 lb organic HAP/gallon coating/consecutive 12-months	Monthly	Y

16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
04	5%	§18.501 and A.C.A.	Weekly Observation

17. DELETED CONDITIONS:

Former SC	Justification for removal
05	TLV table was replaced with emission calculation methodology for determining the PAER

18. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	A	Emissions (tpy)						
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							Single	Total
Welding Shop	A-7	0.0	0.0	0.0	0.0	0.0	0.0	0.0

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
1624-AOP-R3





## APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

## Fee Calculation for Major Source

Revised 08-25-14

Facility Name: Challenger, Inc. (Bass Cat Boats & Yar-  
 Craft Boats)  
 Permit Number: 1624-AOP-R4  
 AFIN: 03-00081

\$/ton factor	23.89	Annual Chargeable Emissions (tpy)	187.58
Permit Type	Renewal No Changes	Permit Fee \$	0

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	0
Initial Title V Permit Fee Chargeable Emissions (tpy)	

*HAPs not included in VOC or PM:* Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride

*Air Contaminants:* All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensable PM, H2S in TRS, etc.)

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		0.3	0.3	0		
PM <sub>10</sub>		0.3	0.3	0	0	0.3
SO <sub>2</sub>		0	0	0	0	0
VOC		114.1	114.1	0	0	114.1
CO		0	0	0		
NO <sub>x</sub>		0	0	0	0	0
Styrene	<input type="checkbox"/>	56.68	56.68	0		
Methyl Methacrylate	<input type="checkbox"/>	1.01	1.01	0		

