

NORTH CAROLINA DIVISION OF AIR QUALITY <p style="text-align: center;">Air Permit Review</p>			Region: Washington Regional Office County: Chowan NC Facility ID: 2100080 Inspector's Name: Steven Daniels Date of Last Inspection: 03/15/2006 Compliance Code: C/In Compliance With Procedural Reqr		
Permit Issue Date:					
Facility Data Applicant (Facility's Name): Albemarle Sportfishing Boats Facility Address: Albemarle Sportfishing Boats 140 Midway Drive Edenton, NC 27932 SIC: 3732 / Boat Building And Repairing NAICS: 336612 / Boat Building Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			Permit Applicability (this application only) SIP: 2D .0503, .0515, .0516, .0521, .0958, .1806, .1100, .1111, 2Q .0705, .0711 NSPS: NESHAP: MACT Subpart VVVV PSD: PSD Avoidance: 250 VOC removed NC Toxics: 2D .1100, 2Q .0705, .0711 112(r): Other: Last MACT/Toxics demonstration MACT Subpart DDDDD but no requirements		
Contact Data			Application Data		
Facility Contact	Authorized Contact	Technical Contact	Application Number: 2100080.04A Date Received: 03/12/2004 Application Type: Modification Application Schedule: TV-1st Time Existing Permit Data Existing Permit Number: 08995/R03 Existing Permit Issue Date: 01/05/2006 Existing Permit Expiration Date: 11/30/2010		
Ramona Phillips Quality Assurance (252) 482-7423 P O Box 349 Edenton NC, 27932	J Harrell President (252) 482-7423 P O Box 349 Edenton NC, 27932	Ramona Phillips Quality Assurance (252) 482-7423 P O Box 349 Edenton NC, 27932			
Review Engineer: Mike Benson Review Engineer's Signature: _____ Date: _____		Comments / Recommendations: Issue 08995/T04 Permit Issue Date: Permit Expiration Date:			

I. Introduction:

The U.S. Environmental Protection Agency (EPA) has given interim approval to North Carolina's Title V operating permits program effective on December 15, 1995. Final approval for the Title V program was received October 1, 2001. Title V facilities are required to obtain an operating permit which addresses all applicable regulations under the State Implementation Plan, Federal Implementation Plan, and other provisions of the Clean Air Act (CAA). The Title V Operating Permit will define all of the facility's obligations under the CAA.

This First Time Title V Air Permit application Review intends to convey all pertinent emissions data, rules, policies, and engineering assumptions used to construct the Title V operating permit. The primary source of information used to construct the permit is the above referenced air permit application. This facility currently has a State-issued Air Quality Permit. Information contained in applications received on March 12, 2004, April 27, 2004, July 28, 2004, August 23, 2005, and additional information received January 24, 2006 was used to process the original permit application.

II. Background Information:

This permit will replace Permit 08995R03, a State “.0300” permit. This Title V permit will be issued as Permit No. 08995T04.

Pursuant to 15A NCAC 2Q .0506 Albemarle Sportfishing Boats submitted its initial Title V application to the Division of Air Quality on March 12, 2004. The permit sat unattended until October 11, 2005, when it was transferred from Engineer II Steve Proctor, RCO, to the current Engineer. Additional information was requested from Albemarle Sportfishing Boats on October 12, 2005. The application was considered complete for processing on January 24, 2006, when the additional information was received. The permit is required to go to public notice pursuant to 15A NCAC 2Q .0521.

III. Facility Description:

Albemarle Sportfishing Boats produces fiberglass boats. Currently the emissions sources at the facility are from processes to mold and make fiberglass boats and a propane-fired boiler. Albemarle Sportfishing Boats is considered major for Title V purposes because styrene emissions exceed the 10 TPY threshold.

IV. Statement of Compliance:

This facility was inspected by Mr. Steven Daniels of WARO on March 15, 2006. The facility was issued an NOV for having torn/misfitting particulate filters. Enforcement is not expected. The facility was noted to be in compliance with MACT Subpart VVVV and the 250 TPY limit for VOC emissions to comply with PSD avoidance.

V. Summary of Emission Sources and Control Devices:

The following table contains a summary of all permitted emission sources and associated air pollution control devices and appurtenances:

Emission Source	Emission Source Description	Control Device	Control Device Description
(ID No. ES-1) (MACT Subpart VVVV)	Assembly Operations	N/A	N/A
(ID No. ES-2) (MACT Subpart VVVV)	Liner lamination/gelcoating	N/A	N/A
(ID No. ES-3) (MACT Subpart VVVV)	Deck Lamination/gelcoating	N/A	N/A
(ID No. ES-4) (MACT Subpart VVVV)	Hull lamination/gelcoating	N/A	N/A
(ID No. ES-7) (MACT Subpart VVVV)	Secondary production area	N/A	N/A
(ID No. ES-5) (MACT Subpart DDDDD)	8.9 million Btu per hour propane fired boiler	N/A	N/A

VI. Emission Source-by-Source Evaluation:

A. Fiberglass boat manufacturing operation consisting of:

- **Assembly Operations (ID No. ES-1),**
- **Liner lamination/gelcoating (ID No. ES-2),**
- **Deck lamination/gelcoating (ID No. ES-3),**
- **Hull lamination/gelcoating (ID No. ES-4), and**
- **Secondary production area (ID No. ES-7)**

1. Description:

Spray and brush application of gelcoat.

2. Applicable Regulatory Requirements:

The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

Regulated Pollutant	Limits/Standards	Applicable Regulation
particulate matter	$E=4.10(P^{0.67})$ where P=process weight in tons per hour	15A NCAC 2D .0515
visible emissions	20 percent opacity	15A NCAC 2D .0521
odorous emissions	State-enforceable only	15A NCAC 2D .1806
toxic air pollutants	State-enforceable only	15A NCAC 2D .1100
toxic air pollutants	State-enforceable only	15A NCAC 2Q .0711
toxic air pollutants	State-enforceable only	15A NCAC 2Q .0705
volatile organic compounds	work practice standards	15A NCAC 2D .0958
Hazardous Air Pollutants	NESHAP for Boat Manufacturing	15A NCAC 2D .1111 40 CFR 63, Subpart VVVV

a. 15A NCAC 2D .0515: "Particulates from Miscellaneous Industrial Process".

Processes that have expected particulate emissions are ES-2, ES-3, and ES-4. Allowable particulate emissions are determined by the formula $E = 4.10 (P)^{0.67}$, where P is the process rate in tons per hour, and E is the allowable particulate emissions rate in pounds per hour. The maximum process rate in all three cases is 18 tons per hour. This yields an allowable particulate emissions rate of $E = 4.10 (18)^{0.67} = 28.43$ pounds per hour. All three processes have basic particulate filters as 'control devices', and these filters have been estimated to have an 86.3 percent efficiency. Estimated actual particulate emissions are 0.76, 0.76, and 1.22 pounds per hour for ES-2, ES-3 and ES-4, respectively. Before controls emissions can be back-calculated as 5.5, 5.5, and 8.9 pounds per hour. This facility is considered to be in compliance with or without particulate controls. Compliance with 2D .0515 is indicated.

No MRR requirements are included in this stipulation because it is physically impossible for the Permittee to exceed the allowable rates.

b. 15A NCAC 2D .0521: “Control of Visible Emissions”.

All sources will be limited to 20 percent visible opacity emissions. Particulate emissions are generally associated with visible opacity (for most processes, excluding VOC condensation out of the stack). As noted above, this equipment is expected to have very little particulate emissions, and based on past experience, facility inspections, and good engineering judgment, zero percent visible opacity emissions are expected. The facility is expected to be in compliance with 2D .0521.

No MRR requirements are included in this stipulation because it is physically impossible for the Permittee to exceed the allowable rate.

c. 15A NCAC 2D .1806: “Control and Prohibition of Odorous Emissions”.

This rule requires the owner or operator of a facility to prevent objectionable odors beyond the facility’s boundary. The most recent inspection showed no odors beyond the property line. This facility is considered to be in compliance with 2D .1806.

B. Propane-fired boiler (ID No. ES-5; 8.9 MBtu per hour maximum heat input)

1. Description:

Propane-fired boiler.

2. Applicable Regulatory Requirements:

The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

Regulated Pollutant	Limits/Standards	Applicable Regulation
particulate matter	0.567 pounds per million Btu heat input	15A NCAC 2D .0503
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 2D .0516
visible emissions	20 percent opacity	15A NCAC 2D .0521
Hazardous Air Pollutants	NESHAP for Industrial, Commercial, and Institutional Boilers and Process <i>(no requirements per 40 CFR 63.7506(c))</i>	15A NCAC 2D .1111 40 CFR 63, Subpart DDDDD

- a. 15A NCAC 2D .0503: “Particulates from Fuel Burning Indirect Heat Exchangers”.

Allowable emissions are determined by the formula $E = 1.090 \times Q^{-0.2594}$, where Q is the sum of all heat input from boilers and process heaters, in million Btu per hour, and E is the allowable particulate emissions, in pounds per hour. Allowable particulate emissions are:

$$E = 1.090 \times (8.9)^{-0.2594} = 0.567 \text{ pounds per hour.}$$

Estimated particulate emissions are obtained from the DAQ spreadsheet for propane-fired boilers (spreadsheet based on EPA Publication AP-42). Estimated particulate emissions are

$$E = (0.04 \text{ lb/hr}) \times (1 \text{ hr}/8.9 \text{ MBtu}) = 0.004 \text{ lb/hr.}$$

Estimated particulate emissions are less than allowable particulate emissions and compliance with 2D .0503 is indicated.

- b. 15A NCAC 2D .0516: “Sulfur Dioxide Emissions from Combustion Sources”.

Emissions of sulfur dioxide are limited to 2.3 pounds per million Btu heat input.

Estimated SO₂ emissions are obtained from the DAQ spreadsheet for propane-fired boilers (spreadsheet based on EPA Publication AP-42). Estimated SO₂ emissions are 0.00 pounds per million Btu heat input (to two decimal places as calculated in the spreadsheet). This was manually confirmed using the AP-42 in the following manner.

$SO_2 = 0.09S$, where S is the sulfur content (gr/100 ft³). DAQ uses a value of S to be 0.1 gr/ft³. Annual fuel use is 861,470 gal/yr. Estimated SO₂ emissions are:

$$(0.1) \times (0.09) = 0.009 \text{ lb-SO}_2/1000 \text{ gal}; (861,470 \text{ gal/yr}) \times (0.009 \text{ lb-SO}_2/1000 \text{ gal}) = 7.75 \text{ lb-SO}_2/\text{yr}; \\ (7.75 \text{ lb-SO}_2/\text{yr}) \times (1 \text{ yr}/8760 \text{ hr}) = 0.000885 \text{ lb/hr. This is below the significant figures presented in the original form (0.09S) and should be considered 0.00 lb/hr.}$$

Compliance with 2D .0516 is indicated.

- c. 15A NCAC 2D .0521: “Control of Visible Emissions”.

Visible opacity emissions are limited to 20 percent. Past inspections as well as good engineering judgment for this type of boiler indicate that the boiler will be operated with zero percent opacity.

Compliance with 2D .0521 is indicated.

- d. 15A NCAC 2D .1111: “Maximum Achievable Control Technology”.

The proposed boiler is subject to MACT, Subpart DDDDD. It is considered to be “Population I”. There are no applicable requirements for Population I under this MACT, not even an initial notification. No specific stipulation was included in the permit, as there are no applicable requirements. The regulation summary table lists the source as MACT-applicable, but that no requirements are applicable under 40 CFR 63.7506(c). Compliance with 2D .1111 is indicated.

D. Other Applicable Regulations

- a. 15A NCAC 2D .0958: “Work Practices for Sources of Volatile Organic Compounds”.

This regulation contains stipulations that are designed to minimize VOC loss. It contains a variety of procedures ranging from storing VOC containing material in tightly closed containers to not filling machines above the fill lines. The most recent inspection showed the facility to be in compliance with 2D .0958.

- b. 15A NCAC 2D .1100: “Control of Toxic Air Pollutants”.

The Company had to perform air dispersion modeling for styrene. Facility-wide limits were established and included in the permit as follows:

EMISSION SOURCE	TOXIC AIR POLLUTANT	EMISSION LIMIT
Facility-wide	Styrene (100-42-5)	63.19 lb/hr
Facility-wide	2,4-Toluene Diisocyanate (584-84-9)	0.08 lb/day

The facility is considered to be in compliance with the AAL for styrene and TDI based on the memo from Tom Anderson, AQAB, September 12, 2005. This modeling also makes the Company in compliance with DAQ’s requirement that a company must do a facility-wide Toxics demonstration when their last MACT takes effect.

- c. 15A NCAC 2D .1111: “Maximum Achievable Control Technology”.

This entire facility (excluding the boiler) is subject to 40 CFR 63, Subpart VVVV, “National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing”. This permit will include all specific language for Subpart VVVV that has been developed by DAQ. All compliance options are included because the Company is allowed to switch compliance options at any time during the year, as long as DAQ is notified. The Permittee is considered to be in compliance with 2D .1111 at this time.

- d. 15A NCAC 2Q .0705: “Existing Facilities and SIC Calls”.

In general, 2Q .0705(b) requires a Permittee to submit a permit application to comply with 2D .1100. This application is required to include an “evaluation” for all toxic air pollutants in 2D .1104, for all sources at the facility, excluding exempt sources in 2Q .0702. If the actual emissions from all sources do not exceed the toxic permitting emissions rates (TPERs) in 2Q .0711, no application is required. However, the Permittee must present documentation of those emission rates upon the Director’s request.

Evaluation is defined in 2Q .0703(9) as:

- (a) a determination that the *emissions from the facility*, including emissions from sources exempted by Rule .0702 (a) (24) through (27) of this Section, are less than the rate listed in Rule .0711 of this Section; or
- (b) a determination of ambient air concentrations as described under 15A NCAC 2D .1106, including emissions from sources exempted by Rule .0702 (24) through (27) of this Section.

Emphasis added.

The proposed Permit No. 08995T04 contains facility-wide limits on the following:

Aniline, Benzene, Ethyl Acetate, Methylene Chloride, MEK, MIK, Xylene, Toluene, and n-Hexane. Each pollutant’s emission limit is determined by its respective TPER limitation (2Q .0711).

The facility has also conducted facility-wide air dispersion modeling for styrene and 2,3-Toluene Diisocyanate. The facility has shown to be in compliance with 2D .1100.

The proposed first time Title V permit application was issued on DATE, 2006, and contains the specific limits for all pollutants mentioned above.

It is considered that last MACT/Toxics requirements **have been** met in full.

Section 2.2.A.5, “Last MACT/Toxics” language was added.

- e. 15A NCAC 2Q .0711: “Emission Rates Requiring a Permit”.

The NC Toxic Air Pollutants TPER limits and estimated emissions:

Pollutant	Allowable Emissions	Estimated Emissions
aniline	0.25 lb/hr	< .01 lb/hr
benzene	8.18 lb/yr	< .3 lb/yr
ethyl acetate	36 lb/hr	< .01 lb/hr
methyl ethyl ketone	78 lb/day 22.4 lb/hr	< .01 lb/day < .01 lb/hr
methyl isobutyl ketone	52 lb/day 7.7 lb/hr	< .1 lb/day < .01 lb/hr
xylene	57 lb/day 16.4 lb/hr	< 1 lb/day < .2 lb/hr
methylene chloride	57 lb/day 16.4 lb/hr	<.8 lb/day < .1 lb/hr
n-hexane	23 lb/day	< 1 lb/day
toluene	98 lb/day 14.4 lb/hr	< 1 lb/day < .2 lb/hr

Emissions were calculated from the sum of all applications currently in-house that were reported on a yearly basis (excluding TAPS exclusively from boiler emissions) and reported on a yearly basis, hourly basis (based on 1500 hours of operation which is most environmentally conservative), or daily basis (hourly basis times 8). Since emissions are estimates they were reported on a ‘less-than basis’.

Expected actual emissions are less than allowable for all TAPs, and the facility is considered to be in compliance with 2Q .0711.

VII. Other Applicable Requirements:

- A. NAA/PSD Issues:

Chowan County has not been triggered for PSD increment tracking. Therefore, PSD increment tracking does not apply. The previously included PSD avoidance limit was examined for maximum worst-worst case emissions VOC (250 TPY). Information submitted by the Company on November 13, 2006 showed that it is impossible for the facility to exceed 250 TPY even under worst-worst-worst case production conditions. Current VOC emissions are ~24 TPY at ~ 100 boats/year. The current capacity of the facility is about ~200 boats/year. The PSD limit would not be exceeded if the Company produces 1,200 boats/year. Therefore, the PSD avoidance limit was removed.

NAA does not apply.

B. NSPS Issues:

This facility is not subject to NSPS.

C. MACT Issues:

This facility is subject to 40 CFR 63, Subpart VVVV (Boat Manufacturing MACT). Specific MACT language for each source was included in this permit. The MACT reporting requirements were synchronized with other reporting requirements in the permit.

The propane-fired boiler (ID No. ES-5) is subject to 40 CFR 63, Subpart DDDDD, "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters". However, this regulation has no requirements for this particular type of boiler.

D. 112(r) Issues:

This facility is not subject to 112(r).

E. CAM Issues:

This facility is not subject to CAM because actual emissions from all PSEUs are less than 100 TPY.

F. NC Air Toxics:

The facility is subject to both 2D .1100 and 2Q .0711. The facility has demonstrated compliance with 2Q .0705.

VIII. Facility-wide Emissions Summary:

Criteria pollutant emissions are summarized from the 2004 emissions inventory.

Pollutant	Actual Emissions (TPY, after controls)
PM	2.22
PM10	1.11
PM2.5	1.11
SO2	1.32
NOx	0.28
CO	0.03
VOC	24.76

The facility is considered to be Title V for estimated styrene (a Federal HAP) emissions of 16 TPY, which is greater than the 10 TPY threshold for any one HAP.

IX. Facility Compliance Status/Compliance History:

A review of IBEAM as well as the physical file history located in the Central Files was conducted. The facility is considered to be in compliance based on information contained in these applications. NOVs for not keeping storage containers tightly closed and having filters installed that were too small have been issued in the past. At this time, it is believed that the facility is in compliance with all applicable Air Quality regulations.

A statement of compliance (Form E5) was received on August 23, 2005, indicating that the facility is in compliance with all applicable regulations.

X. Public Notice / EPA and Affected State Review:

Pursuant to 2Q. 0521, a notice of the draft Title V Permit will be placed in a newspaper of general circulation in the area where the facility is located. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice will be sent to persons on the Title V mailing list and EPA. Pursuant to 2Q .0522, a copy of each permit application, each proposed permit, and each final permit was provided to EPA. Also pursuant to 2Q .0522, a notice of the draft Title V Permit was provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. Virginia is an affected State for this facility. No comments from EPA or the public were received OR INSERT COMMENTS.

XI. Conclusions, Comments, and Recommendations:

The most recent General Conditions were included in this permit.

A PE seal was not needed for this application.

Form E5, "Title V Compliance Certification", was submitted for this application.

WARO agreed that no MRR requirements were needed for processes that can not physically exceed the allowable limit(s).

WARO recommends issuance of Permit No. 08995T04.

Recommend issuance of Permit No. 08995T04.