

NORTH CAROLINA DIVISION OF
AIR QUALITY

Application Review

Issue Date:

Region: Washington Regional Office
County: Pitt
NC Facility ID: 7400317
Inspector's Name: Robert Bright
Date of Last Inspection: 03/18/2025
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): World Cat Greenville

Facility Address:
World Cat Greenville
601 Staton Road
Greenville, NC 27834

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: 15A NCAC 02D .0515, 02D .0521,
02D .1806, 02D .1111,
NSPS: N/A
NESHAP: 40 CFR 63 MACT VVVV
PSD: N/A
PSD Avoidance: 02Q .0317
NC Toxics: 02Q .0711 and 02D .1100
112(r): N/A
Other:

Contact Data

Facility Contact

Scott Ellis
Head of Manufacturing
Engineer
(252) 641-8000
1090 West Saint James
Street
Tarboro, NC 27886

Authorized Contact

Scott Ellis
Head of Manufacturing
Engineer
(252) 641-8000
1090 West Saint James
Street
Tarboro, NC 27886

Technical Contact

Scott Ellis
Head of Manufacturing
Engineer
(252) 641-8000
1090 West Saint James
Street
Tarboro, NC 27886

Application Data

Application Number: 7400317.23A
Date Received: 09/11/2023
Application Type: Modification
Application Schedule: TV-1st Time
Existing Permit Data
Existing Permit Number: 10681/R00
Existing Permit Issue Date: 09/22/2022
Existing Permit Expiration Date: 08/31/2030

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2023	---	---	15.71	---	---	14.00	12.68 [Styrene]
2022	---	---	21.07	---	---	17.71	15.31 [Styrene]

Review Engineer: Conzuela B. Cogdell

Review Engineer's Signature:

Date:

Comments / Recommendations:

Issue 10681/T01

Permit Issue Date:

Permit Expiration Date:

1. Purpose of Application

HC Composites, LLC (HC Composites) operates a production facility that builds fiberglass recreational boats. The production facility is in Greenville, North Carolina and is referred to as World Cat Greenville (WCG).

World Cat Greenville currently holds Air Permit No. 10681R00 with an expiration date of August 31, 2030, for a recreational boat manufacturing facility in Greenville, North Carolina. This permit application is for their first Title V Permit. The TV Permit application was received September 11, 2023, or within 12 months of issuance of Air Permit No. 10681R00, as required by 15A NCAC 02Q .0504.

Due to the issuance of Air Permit 106891R00 on September 22, 2022, WCG's TV permit application was received within the required time frame. The existing permit shall not expire until the TV Permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the TV Permit has been issued or denied.

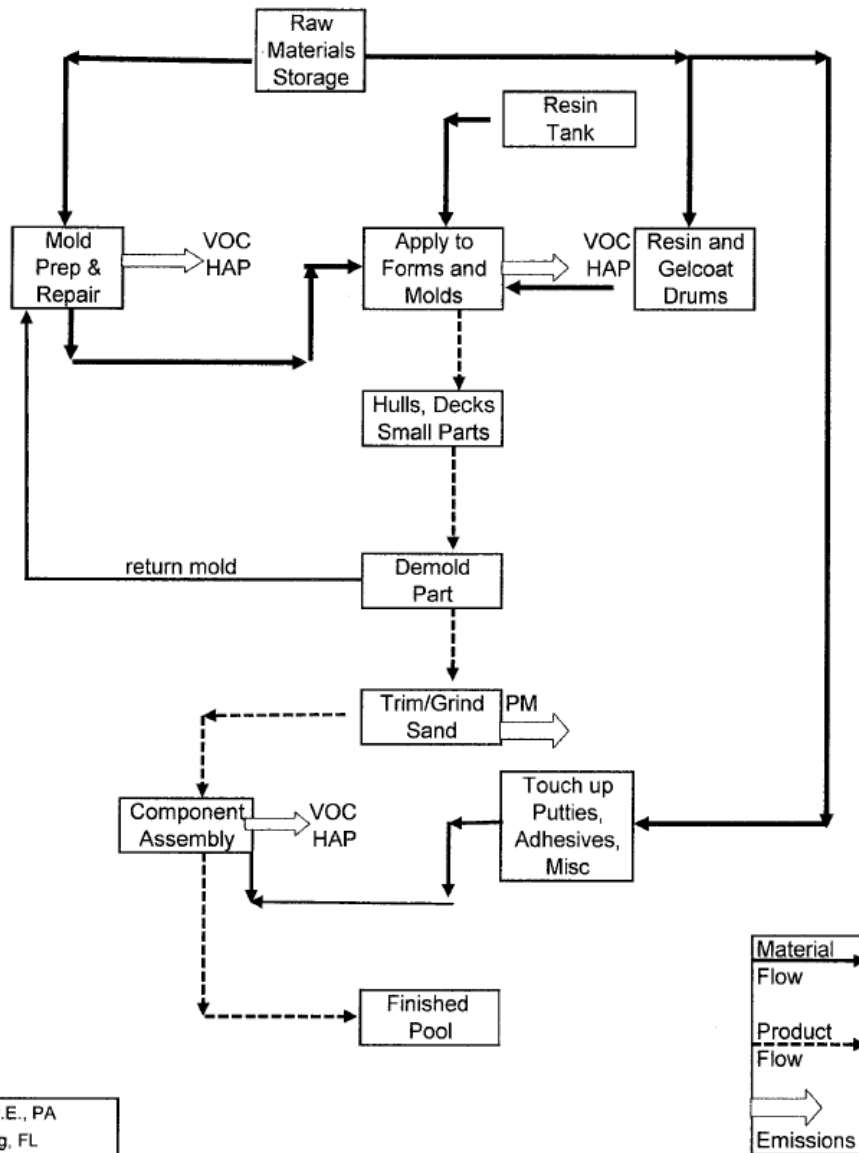
The revised permit will contain emission limitations and associated testing monitoring, recordkeeping and reporting consistent with the Title V permitting regulations found under 15A NCAC 02Q .0500. No physical changes or changes in the method of operation are being addressed in this permitting action.

2. Facility Description

HC Composites operates a fiberglass boat manufacturing facility, World Cat Greenville, (WCG) in Greenville, NC. WCG manufactures 26-40 feet center console models and 40 feet dual console model fiberglass boats. Fiberglass manufacturing includes mold staging/preparation, gelcoat application, lay-up, demold/pull-out, cut-off/trimming/grinding, and final assembly. The flow process is shown below.

Process Flow Diagram

World Cat Greenville
Pitt County



Tom John, P.E., PA
St Petersburg, FL
727.403.8736

The mold staging /preparation area is where molds are cleaned, sealed, and waxed for gelcoat application. The mold is then taken to the gelcoat area where gelcoat is applied using spray guns. After gel coat is applied, the mold is taken to the lay-up area where chopped strand mat and resin is applied with spray guns. After parts are cured, they are separated from the mold, using plastic wedges and rubber mallets in the demold/pull-out area. The cutoff/trim/grind operation is where demolded parts are trimmed to length and grinded if necessary, using small hand tools. The boats are completed in final assembly including

foam filling, putty application, carpet installation (if applicable) and installation of small parts and accessories.

WCG facility is a Title V facility, because emissions of hazardous air pollutants (HAPs) exceed the major source thresholds of 10 tons per year of any single HAP and/or 25 tons per year of all HAPs combined. Specifically, actual emissions of styrene (single HAP) exceed 10 tons per year threshold (refer to page 1 of this document).

3. History/Background/Application Chronology

History/Background

March 15, 2022	Air Permit Application was received by NCDAQ
July 28, 2022	NOV/NRE was issued for violation of NCGS 143-215.108 and was resolved September 22, 2022
September 22, 2022	Air Permit No. 10681R00 was issued
February 8, 2023	Site inspection was performed by Robert Bright
February 27, 2024	Site inspection was performed by Robert Bright
March 18, 2025	Site inspection performed by Robert Bright

Application Chronology

September 11, 2023	First time TV Permit Application was received
September 11, 2023	TV Acknowledgement/Completeness letter sent
April 15, 2024	TV application reassigned to C.B. Cogdell
November 18, 2024	Sent Request for Technical Information (Sample calculation/spreadsheet): Response received December 3, 2024
December 10, 2024	Sent request for PM information for lamination area. Spoke to consultant on 11 th regarding how potential PM is greater than or equal to the allowable and that lamination area was not included in either calculation. The consultant said he will send revised information.
December 12, 2024	Received requested PM data
January 28, 2025	Draft Documents forwarded to Supervisor J. Voelker
March 11, 2025	Tracking sheet signed by Supervisor J. Voelker.
March 13, 2025	Draft Documents Comments received from 1 st line Supervisor J. Voelker
April 2, 2025	Draft Documents forwarded to Regional Office and Facility for comments
April 10, 2025	Received comments and track changes from all parties
April 11, 2025	Updated TVEE by adding 6 control devices <ul style="list-style-type: none"> • CD-L1: Panel Filter (56 square feet of filter area) • CD-L2: Panel Filter (112 square feet of filter area) • CD-L3: Panel Filter (112 square feet of filter area) • CD-L4: Panel Filter (112 square feet of filter area) • CD-SP1: Panel Filter (112 square feet of filter area) • CD-SP2: Panel Filter (112 square feet of filter area)
April 21, 2025	TVEE Approved
April 12, 2025	Draft Statement of Basis and Draft Permit forward for Notice

4. Permit and TVEE Discussion

The following table describes the modifications to the current permit as part of the renewal process. This summary is not meant to be an exact accounting of each change but a summary of those changes.

Page No.	Section	Description of Changes
4	Section 1	Separated Filter Panels to six separate CD ID's and provide square footage of filter wall from R00 permit.
	Throughout	<p>The following items were removed:</p> <ul style="list-style-type: none"> • Permit renewal requirement (addressed under General Conditions K) • 15A NCAC 02Q .0207 (addressed under 15A NCAC 02Q .0508(f)) • 15A NCAC 02D .0540 (addressed under General Conditions MM) • 15A NCAC 02D.0535 (addressed under General Conditions I.A through I.C) and • 15A NCAC 02D .0611 (addressed under 15A NCAC 02D .0515)

Emission Source ID No.	Emission Source Description	Control Device No.	Control Device Description
ES-LAM01 (MACT VVVV)	Facility-wide boat manufacturing operations including gelcoat, lamination, upholstery adhesive, and application equipment cleaning operations	CD-L1 CD-L2 CD-L3 CD-L4 CD-SP1 CD-SP2	Panel Filter (56 square feet of filter area) Panel Filter (112 square feet of filter area) Panel Filter (112 square feet of filter area) Panel Filter (112 square feet of filter area) Panel Filter (112 square feet of filter area) Panel Filter (112 square feet of filter area)

5. Regulatory Review

The facility's equipment and operations have not changed since the Air Permit issued September 22, 2022. (WCG) is subject to the following regulations.

15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"

This rule applies to sources that emit particles and are not subject to any other particulate emission standard in 02D .0500. The boat manufacturing building source is subject to this rule as below:

Emissions of particulate matter from this source (ID No. ES-LAM01) shall not exceed the allowable emission rate as calculated by the following equation:

eq-1

$$E = 4.10 \times P^{0.67} \quad (\text{for process rates less than or equal to 30 tons per hour}), \text{ or eq-2}$$

$$E = 55.0 \times P^{0.11} - 40 \quad (\text{for process rates greater than 30 tons per hour})$$

Where E = allowable emission rate in pounds per hour
 P = process rate in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

The rule limits particulate emissions based on the process rate of the specific sources.

Per 15A NCAC 02D .0515, the allowable emission rate for spray guns (gel and resin) operation will be

$$E = 4.10 \times \left(1.73 \frac{\text{tons}}{\text{hour}} \right)^{0.67}$$
$$E = 5.92 \frac{\text{lbs}}{\text{hour}}$$

WCG reported they purchase 2,340,000 lbs. of resin and gel-coating annually, and their actual hours of operation are 2000 hours per year, giving an emission rate of 2.925 lbs. per hour which is still below the allowable. Due to maximum emission rates of less than 30 tons per hour, equation 1 applies.

To ensure PM emissions meet this standard, monitoring, recordkeeping, and reporting requirements apply to the dry filters (CD-PF).

To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:

- i. a monthly reporting of resin and gel coat usage
- ii. visual inspection of the overspray filters and
- iii. a monthly visual inspection of the systems' ductwork for leaks.

Typical recordkeeping and reporting will also be required. March 18, 2025, inspection report noted compliance with 02D .0515. Continued compliance is expected.

15A NCAC 02D .0521 “Control of Visible Emissions”

This rule applies to sources with visible emissions ("VE") that are not subject to 15A NCAC 02D .0506, .0508, .0524, .1110, .1111, .1206, or .1210 a different VE standard. Each source at this facility is limited to 20% opacity. WCG must perform regular observations to ensure that VE does not exceed this limit and keep records of those observations. Records must be reported twice per year.

WCG has six-point sources for the various stages of their boat manufacturing processes, each with a dedicated stack. Based on WCG's recent February 29th, 2024, inspection report, visible emissions were not observed and continued compliance is expected.

15A NCAC 02D .1806 “Control of Prohibition of Odorous Emissions”

During WCG's inspection, the faint scent of styrene was detected within the building, however, it was not detected outside of the facility, and they have not received any complaints. Continued compliance is expected.

15A NCAC 02D .1111 “Maximum Achievable Control Technology (40 CFR 63 Subpart VVVV)”

WCG is subject to 40 CFR 63 Subpart VVVV, “National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing”. More discussion on MACT is provided below in Section 6.

6. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS

The facility is not currently subject to any New Source Performance Standards.

NESHAP/MACT

The facility is subject to Maximum Achievable Control Technology standards.

In 2001, EPA promulgated the National Emissions Standards for Hazardous Air Pollutants for Boat Manufacturing, 40 CFR Part 63 Subpart VVVV (2001 NESHAP). The 2001 NESHAP established organic hazardous air pollutant (HAP) emission limits based on low-HAP resins and gel coats and low-emitting resin applications. In 2020, EPA reviewed 40 CFR Part 63 Subpart VVVV. The rule was amended at 85 FR 15971, March 20, 2020, and became effective March 30, 2020. The following were addressed: Startup, Shutdown and Malfunction (SSM), amended provisions regarding electronic reporting of performance tests and performance evaluation results and semiannual reports, removal of regulatory language that is inconsistent with the requirement that the standards apply at all times, inclusion of language requiring electronic reporting of reporting of performance test and evaluation results and semiannual reports and an amendment to the NESHAP to clarify that mixers that route to a capture and control device system with at least 95-percent efficiency overall are not required to have covers. The numeric emission limits of the standards for both source categories remain unchanged.

WCG is a major source of HAPs because emissions of styrene exceed 10 tons per year. As such, the facility is subject to the National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing, 40 CFR Part 63 Subpart VVVV.

The 40 CFR 63 Subpart VVVV applies to the facility's open molding resin and gel operations. HAPs are potentially emitted from the product resin, pigmented gel coat, solvent cleaning, tooling resin and tooling gel coat used at the facility.

The facility has selected the “Model Point Value Averaging (Emissions Averaging)”, 40 CFR 63.5704(a), option to meet the MACT emission limits in 40 CFR 63.5698 for the resins and gel coats used in the

lamination and gel coating areas (ES-LAM01). They currently use compliant materials which are subject to 40 CFR 63 Subpart VVVV.

Under this Emission Averaging Option, WCG tracks facility-wide monthly usage of HAP containing resin, pigmented gel coat, clear gel coat, tooling resin and tooling gel and calculates facility-wide monthly usage of each HAP containing resin and gel coat. They calculate the facility-12 month rolling average organic HAP emission limit per 40 CFR 63.5698(b) Equation 1 and 12-month rolling MACT model point value calculation in accordance with 40 CFR 63.5710 procedures monthly. Compliance is demonstrated if organic HAP contents calculated under 40 CFR 63.5710(b) are no greater than the applicable organic HAP content limits calculated under 40 CFR 63.5698(b) of the same 12-month period.

The proposed TV Permit reflects all applicable requirements of the most recent promulgation of 40 CFR 63 Subpart VVVV.

Continued compliance is expected.

PSD

WCG application Form D1 (Facility-wide Emissions Summary) stated their expected actual emissions (after controls/limitations) will be approximately 23 tons per year with a potential emission of 99 tons per year. With VOCs less than 100 tons per year, this categorizes WCG as a Minor Source. Therefore, PSD Avoidance per 15A NCAC 02D .0317 for VOCs is not required.

112(r)

The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the 112(r) thresholds. No change with respect to 112(r) is anticipated under this permit renewal.

CAM

40 CFR 64 requires that a continuous assurance monitoring plan be developed for all equipment located at major facilities that have pre-controlled emissions above the major source threshold and use a control device to meet an applicable standard. This facility does not utilize a control device to meet compliance with an emission limit or a standard for a federally regulated pollutant, nor does the facility have uncontrolled potential emissions greater than 100 tons per year. Therefore, CAM is not applicable to this facility.

7. Facility Wide Air Toxics

State enforceable only

15A NCAC 02Q .0700: TOXIC AIR POLLUTANT PROCEDURES

15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS

The regulations at 15A NCAC 02Q .0700 require, with some exceptions, a permit to emit any toxic air pollutant (TAP) at levels greater than the toxic air pollutant permitting emission rate (TPER) specified in 15A NCAC 02Q .0711. These regulations include the procedural rules used to comply with the TAP control requirements found at 15A NCAC 02D .1100. 15A NCAC 02D .1104 contains Acceptable Ambient Levels (AALs) for each TAP. Generally, a facility must conduct a dispersion modeling analysis to demonstrate that each TAP emitted above its respective TPER will not result in the respective AAL being exceeded beyond the facility's premises. Collectively, these "toxics" rules are state-enforceable only and are not subject to the TV requirements found at 15A NCAC 02Q .0500.

All sources of TAPs at WCG are subject to MACT (i.e., MACT VVVV) and therefore meet the toxics permitting exemption set forth in 15A NCAC 02Q .0702(a)(27). However, pursuant 15A NCAC 02Q .0704(c) (“New Facilities”), sources meeting the exemption set forth in 15A NCAC 02Q .0702(a)(27) shall be reviewed by the Division pursuant to G.S. 143-215.107(a)(5)b to ensure they do not pose an “an unacceptable risk to human health.” This review was conducted during the processing of permit revision No. R00 which was issued on September 22, 2022.

During the review for permit revision No. R00, the DAQ modeled styrene, the only TAP expected to be emitted above its TPER, a number of different ways. The DAQ also considered a significant nearby off-site source of styrene emissions, Grady-White Boats, Inc. (GWB), another boat manufacturing facility (facility ID No. 7400104) . These modeling exercise results were memorialized in memos issued by the DAQ’s Air Quality Analysis Branch (AQAB) on March 23, 2022, and September 19, 2022. As memorialized in the review for permit revision No. R00, the DAQ concluded that the styrene emissions from WCG and GWB combined were not expected to present an unacceptable risk to human health based on these dispersion modeling analyses.

An additional dispersion modeling analysis for styrene was conducted and memorialized in a memo issued by the AQAB on March 27, 2024, in response to modifications being considered at that nearby GWB facility in 2024. In that dispersion modeling analysis, the potential emissions from the GWB facility (approximately 47 lb/hr) and emission rates were well over the potential emissions from WCG (99 lb/hr) were considered. A review of the current application (see Form D1) shows that WCG estimates its potential styrene emissions at 16 pounds per hour. Thus, this modeling analysis considered styrene emission rates from WCG over 6 (i.e., 99/16) times greater than what is expected on a potential hourly basis.

The maximum ambient impacts predicted by that modeling analysis is reproduced below.

Table 1. Maximum Impacts
Grady-White Boats, Inc., Greenville, Pitt County, North Carolina

Pollutant	Averaging Period	Max. Conc. (µg/m³)	AAL (µg/m³)	% of AAL
Styrene	1-hour	10,139.6	10,600	95.7%

In summary, although the modeling demonstration shows a small margin of compliance with the styrene AAL, the emission rates modeled were much more conservative than those seen in practice. Thus, it is reasonable to conclude that no unacceptable risk to human health results from WCG remaining exempt from having a permit to emit TAPS pursuant to 15A NCAC 02Q .0700.

The facility’s equipment and operations have not changed since the issuance of their Air Permit 10681R00 in 2022, therefore the determination from 2022 AQAB analysis is valid. The permit reflects the most current stipulations for all applicable regulations. Continued compliance is expected.

8. Facility Emissions Review

The facility-wide potential emissions have not changed because of this First time TV permit from their current Air Permit (see Attachment A). Actual emissions for criteria pollutants and HAPs for calendar years 2022 and 2023 are provided in the header of this permit review.

9. Compliance Status

DAQ has reviewed the compliance status of World Cat Greenville. During the most recent inspection conducted on February 29, 2024, the facility appeared to comply with all applicable requirements. The facility's Annual Compliance Certification has not been received as of this application. However, the semi-annual was received June 5, 2024, indicating compliance with all applicable requirements.

10. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. No affected states or local agencies are within 50 miles of this facility. The current NC permitting policy is to provide notice to all local programs in NC and all contiguous states regardless of their status as an affected state under 02Q .0522.

11. Other Regulatory Considerations

- A P.E. seal is NOT required for this permit application.
- A zoning consistency determination is NOT required for this permit application.
- A permit fee is NOT required for this permit application.

12. Recommendations

The permit application for World Cat Greenville has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends the issuance of Air Permit No. 10681/T01

Attachment A

(7400317.20A Application Review)

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: 9/22/2022

Region: Washington Regional Office
County: Pitt
NC Facility ID: 7400317
Inspector's Name: Kurt Tidd
Date of Last Inspection: N/A
Compliance Code: N/A

<p align="center">Facility Data</p> <p>Applicant (Facility's Name): World Cat Greenville</p> <p>Facility Address: World Cat Greenville 601 Staton Road Greenville, NC 27834</p> <p>SIC: 3732 / Boat Building and Repairing NAICS: 336612 / Boat Building</p> <p>Facility Classification: Before: Permit/Registration Pending After: Title V Fee Classification: Before: N/A After: Title V</p>			<p align="center">Permit Applicability (this application only)</p> <p>SIP: 15A NCAC 02D .0515, .0521, .0535, .0540, .0605, .0611, .1111, .1806, 02Q .0207 and .0504 NSPS: N/A NESHAP: 40 CFR 63 Subpart VVVV PSD: N/A PSD Avoidance: N/A NC Toxics: 15A NCAC 02Q .0702(a)(27) Exempt 112(r): N/A Other: N/A</p>																				
<p align="center">Contact Data</p> <table border="1"> <tr> <td> <p align="center">Facility Contact</p> <p>Scott Ellis Director of Manufacturing/ Engineering (252) 641-8000 601 Staton Road Greenville, NC 27834</p> </td> <td> <p align="center">Authorized Contact</p> <p>Scott Ellis Director of Manufacturing/ Engineering (252) 641-8000 601 Staton Road Greenville, NC 27834</p> </td> <td> <p align="center">Technical Contact</p> <p>Scott Ellis Director of Manufacturing/ Engineering (252) 641-8000 601 Staton Road Greenville, NC 27834</p> </td> </tr> </table>			<p align="center">Facility Contact</p> <p>Scott Ellis Director of Manufacturing/ Engineering (252) 641-8000 601 Staton Road Greenville, NC 27834</p>	<p align="center">Authorized Contact</p> <p>Scott Ellis Director of Manufacturing/ Engineering (252) 641-8000 601 Staton Road Greenville, NC 27834</p>	<p align="center">Technical Contact</p> <p>Scott Ellis Director of Manufacturing/ Engineering (252) 641-8000 601 Staton Road Greenville, NC 27834</p>	<p align="center">Application Data</p> <p>Application Number: 7400317.20A Date Received: 11/04/2020 Application Type: Greenfield Facility Application Schedule: State Existing Permit Data Existing Permit Number: N/A Existing Permit Issue Date: N/A Existing Permit Expiration Date: N/A</p>																	
<p align="center">Facility Contact</p> <p>Scott Ellis Director of Manufacturing/ Engineering (252) 641-8000 601 Staton Road Greenville, NC 27834</p>	<p align="center">Authorized Contact</p> <p>Scott Ellis Director of Manufacturing/ Engineering (252) 641-8000 601 Staton Road Greenville, NC 27834</p>	<p align="center">Technical Contact</p> <p>Scott Ellis Director of Manufacturing/ Engineering (252) 641-8000 601 Staton Road Greenville, NC 27834</p>																					
<p>Total Actual emissions in TONS/YEAR:</p> <table border="1"> <tr> <td>CY</td> <td>SO2</td> <td>NOX</td> <td>VOC</td> <td>CO</td> <td>PM10</td> <td>Total HAP</td> <td>Largest HAP</td> </tr> <tr> <td colspan="8"><No Inventory></td> </tr> </table>								CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP	<No Inventory>							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP																
<No Inventory>																							
<p>Review Engineer: Jeff Twisdale</p> <p>Review Engineer's Signature: <i>Jeff Twisdale</i> Date: <i>9/22/2022</i></p>				<p align="center">Comments / Recommendations:</p> <p>Issue 10681/R00 Permit Issue Date: 9/22/2022 Permit Expiration Date: 8/31/2030</p>																			

I. Purpose of Application:

World Cat Greenville (WCG), under parent company, HC Composites LLC, submitted a permit application (7400317.20A) for a greenfield facility located in Greenville, North Carolina. The facility is a fiberglass boat manufacturing operation that will build a select range of styles and sizes in an existing building at this new location. The facility has requested to permit the fiberglass boat building operation under a construction and operation air permit for the following equipment:

- Resin and gelcoat application area (ID No. ES-LAM01) controlled by panel filters (ID No. CD-PF)
- Two resin storage tanks (6,000 gallons capacity each, ID Nos. IRST01 and IRST02)

The facility will be major for hazardous air pollutants (HAP) since styrene emissions are expected to be greater than 10 tons per year (tpy). As a result, the facility will be required to comply with the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Boat Manufacturing (40 CFR 63 Subpart VVVV). The facility will also have the potential to emit greater than 100 tpy of volatile organic compounds (VOCs). Therefore, the facility will be classified as Title V (TV). This permit is being issued pursuant to 15A NCAC 02Q .0300 procedures as allowed under 15A NCAC 02Q .0504.

Table 1. Facility Emissions Overview

Pollutant	Expected Actual Emissions (tons/yr)	Potential Emissions Before Controls (tons/yr)	Potential Emissions After Limitation (tons/yr)
VOC	84.0	122.2	84.0
Highest Individual HAP (styrene)	32.9	43.4	32.9
Total HAP	37.5	53.5	37.5

II. Facility Description

WCG will manufacture fiberglass outboard power catamarans (boats with twin hulls) in open molds as well as some parts in closed molds. The finished boats will range in length from 23 feet to 40 feet and are available in Center Console and Dual Console models. The WCG facility consists of a single "L" shaped building approximately 505 feet wide and 600 feet long containing two main activity areas. The north-south segment of the "L" contains the product assembly area. Minimal emissions are anticipated from this area. The gelcoat and resin application activities and the resin curing will be conducted in the lamination area in the approximately square building segment.

III. Application Chronology/History

November 4, 2020	The Raleigh Central Office (RCO) received a permit application that was deemed incomplete since the application fee, zoning and signature were not included. An acknowledgement letter was sent stating that the application was incomplete.
January 12, 2021	Received the fee, zoning and signature info needed.
February 16, 2021	Requested information concerning HAP/TAP emission points; MACT VVVV compliance demonstration; PM control for cutting, grinding, and sanding operations; maximum capacity of the resin tanks, and any painting or gelcoat spray booths being utilized.
March 12, 2021	Received information from Tom John, consultant representing WCG, concerning HAP/TAP emission points being vertical stacks with no rain caps; MACT VVVV compliance demonstration by utilizing the MACT model point value averaging option and complaint materials; good housekeeping practices to limit PM from being released from the building; maximum capacity of the resin tanks to be 6,000 gallons, and currently no plans for painting or gelcoat spray booths.
March 18, 2021	Requested the short-term styrene emissions that need to be estimated to represent the potential higher short-term emissions rather than being back calculated from the annual estimates.
November 8, 2021	Received information from Tom John (WCG) concerning styrene emission rates, updated gelcoat and resin usages, and updated applications forms.
November 11, 2021	Requested updated tracking frequency for the gelcoat and resin on a short-term basis to ensure compliance with the styrene TPER value, and for the source and stack parameters needed for dispersion modeling.
December 15, 2021	Received information from Tom John including a layout indicating the six fan locations evacuating the styrene emissions, and an updated spreadsheet showing the styrene emissions per hourly usage.
February 14, 2022	Matt Porter, AQAB meteorologist, sent additional info request for source, stack and site parameters in order to perform the dispersion modeling for styrene.

March 11, 2022	RCO requested the source, stack and site parameters for dispersion modeling as well as the updated facility contact info for a second time.
March 15, 2022	Received the source, stack and site parameters needed for dispersion modeling.
March 23, 2022	Matt Porter completed Toxics (styrene) modeling memo to ensure that there is no unacceptable risk to human health.
April 4, 2022	Requested details on PM emitted from the building, and if any filters were used to control those emissions. An email from Scott Ellis, Responsible Official for WCG, requested that the facility be exempt from State air toxics in accordance with 15A NCAC 02Q .0702(a)(27)(B) since the facility is subject to the Boat Building MACT Subpart VVVV.
April 19, 2022	Received details on panel filters installed on six exhaust stacks to control PM and the exemption request for Toxics from Scott Ellis (WCG) pursuant to 15A NCAC 02Q .0702(a)(27).
May 5, 2022	Draft permit and review submitted for comment to Booker Pullen, NSR supervisor for review.
May 6, 2022	Minor comments received on the draft review from Booker Pullen, NSR supervisor.
May 12, 2022	Draft permit and review were submitted for comment to Scott Ellis of WCG, Yongcheng Chen and Kurt Tidd of the Washington Regional Office (WaRO), Samir Parekh of the Stationary Source Compliance Branch (SSCB).
May 13, 2022	Minor comments received on the draft permit from Kurt Tidd (WaRO).
May 17, 2022	No comments received on the draft permit and review from Scott Ellis (WCG).
May 24 through June 23, 2022	Public notice of opportunity for public comment for this preliminary determination regarding approval of the air permit application published in The Daily Reflector (legal classifieds).
June 22, 2022	Mark Cuilla, Chief of DAQ Permitting Section, Shawn Taylor, DAQ Public Information Officer, and Renee Kramer, Title VI and Environmental Justice Coordinator, held a conference call with several citizens who expressed concern regarding the company's compliance history at a separate existing location, the toxic nature of styrene, cumulative impacts from all emissions in the area, and lack of oversight by the DAQ while relying on "self-monitoring" by WCG.
June 23, 2022	Received public comments requesting a public hearing/extension of the comment period.
June 24, 2022	Received Director's notification to proceed with a public hearing.
July 21 through August 29, 2022	Public notice of public hearing and opportunity for public comment for this proposal published in The Daily Reflector (legal classifieds).
August 25, 2022	Public hearing held at Pitt County Community College (Joyner Auditorium in Williams Building).
September 22, 2022	Ashby Armistead, DAQ's Hearing Officer, presented the Hearing Officer's Report to the Director.
September 22, 2022	Director approves the Hearing Officer's Report and sends to Mark Cuilla, Permitting Section Chief.
September 22, 2022	Sent final draft permit to Mark Cuilla, Permitting Section Chief, for signature.

IV. Regulatory Review

WCG will be subject to the following regulations:

15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes"
 15A NCAC 02D .0521 "Control of Visible Emissions"
 15A NCAC 02D .0605 "General Recordkeeping and Reporting Requirements"
 15A NCAC 02D .0611 "Monitoring Emissions from Other Sources"
 15A NCAC 02D .1111 "40 CFR 63 Subpart VVVV; NESHAP for Boat Manufacturing"
 15A NCAC 02D .1806 "Control and Prohibition of Odorous Emissions" (State-enforceable only)
 15A NCAC 02D .0535 "Excess Emissions Reporting and Malfunction"
 15A NCAC 02D .0540 "Particulates from Fugitive Dust Emission Sources"
 15A NCAC 02Q .0207 "Annual Emissions Reporting"
 15A NCAC 02Q .0504 "Option for Obtaining Construction and Operation Permit"

WCG shall follow all the required monitoring, recordkeeping and reporting associated with these regulations, and with the MACT for the specific affected sources as indicated below:

Emission Source ID No(s).	Emission Source Description	Control Device	Control Device Description
ES-LAM01 MACT VVVV	Resin and gelcoat application area	CD-PF	Panel Filters installed on each exhaust stack
IRST01* and IRST02*	Two resin storage tanks (6,000 gallons capacity each)	N/A	N/A

* Insignificant Activities per 15A NCAC 02Q .0503(8)

V. Specific Emission Sources and Control Devices

A. Resin and gelcoat application area (ID No. ES-LAM01) with panel filters (ID No. CD-PF)

This area will be used for the gelcoating and laminating (open molding) of the large parts including decks, hulls, liners, etc. as well as small parts including hatches, covers, consoles, etc. In addition, this area will be used for closed molding including mold preparation (waxing) and repair of molds.

Styrene based gelcoat is applied predominantly by spray methods to the hull and deck forms and molds in the lamination area and is allowed to cure during the manufacturing process. Styrene based resin is hard piped to the point of use from either of two 6,000-gallon resin storage tanks located on the western side of the building. The resin storage tanks will be equipped with conservation vents on J-neck vents and estimated to have total breathing and working losses from both tanks estimated at less than 100 pounds per year based on estimated annual resin usage of 93,700 gallons of resin per year, or 15.5 total turnovers per year (both tanks combined). (See *TANKS 4.09d model output in Attachment 2 of the application*). Therefore, the tanks will be Insignificant Activities per 15A NCAC 02Q .0503(8).

Resin and fiberglass for structural support are hand applied over the gelcoat on the mold using buckets/brushes and rollers or non-atomized spray methods. When a sufficient thickness of resin/fiberglass has been applied to the mold, the resin is allowed to fully cure and harden. In addition to the hand/spray resin application to the open mold, the facility also utilizes vacuum infusion/resin transfer molding (RTM) of some components and some model lines. In these methods, cut to shape fiberglass mat is applied over the gelcoat without the application of resin. A plastic/silicone sheet is placed over the fiberglass and sealed at the edges of the mold. Catalyzed resin is forced into the open spaces in the fiberglass mat by application of vacuum at the discharge end or pressure at the inlet

After curing, the hardened fiberglass hull and deck parts are removed from the mold and the excess material trimmed as necessary to remove the excess flashing. If necessary, imperfections in the surfaces are removed by grinding the surface and re-applying gelcoat and/or resin. The trimming, cutting, shaping and grinding operations are typically performed by handheld air driven tools and by limited tabletop equipment. These activities are generally controlled by small portable vacuum collectors and normal good housekeeping type procedures, including frequent cleaning of surfaces and sweeping of floors by providing control of all particulate matter (PM) generated that will be necessary to prevent contamination of the molds and the curing fiberglass surfaces in the adjoining work area. Minimal PM will exit the building from these activities due to the panel filters being installed on each of the six vertical stacks for the building. The panel filters will be 24" x 24" x 0.5" each with 0.44 ounce per square foot, 6 denier polyester with a PVAC binder for the filter material. These panel filters will have a Minimum Efficiency Reporting Value (MERV) of 4 or 5.

The manufacture of small parts other than the large parts is performed in a similar process with the same methods and materials as is used for hulls and decks but with correspondingly smaller molds. After removal of the components from the molds, the molds are cleaned, inspected and prepared for return to lamination in the mold care step, using solvent-based materials. Scratches and other imperfections observed on the mold surface are repaired, if necessary, typically with resin or gelcoat tooling. In some situations, for example a damaged mold or a new product line, a new mold will have to be manufactured, using production or other resins and tooling. Mold care is typically conducted in or near the lamination area, but the activity may be located farther away as the situation demands.

Completed hulls and decks are relocated to the adjacent Assembly Area that has minimal emissions and then are prepared for the addition of small parts and components, motors, electrical and mechanical equipment, wiring installation, and final assembly. Two-part floatation foam may also be added as part of the assembly, depending on the boat model line requirements. Miscellaneous HAP-containing bonding or other putties, fillers, waxes and solvents, and various adhesives and coatings are used in the assembly area. When completed, the finished boat is inspected and prepared for storage prior to delivery.

Fugitive sources, such as open product and waste containers, will be identified and minimized, and solvents in general will be subject to careful disbursement and general good housekeeping practices, including the use of solvent safety cans, etc. to minimize emissions. Acetone, the primary cleanup solvent, is no longer considered a VOC, but the usages and emissions may be included in the facility records for completeness.

15A NCAC 02D .0515 - Particulates from Miscellaneous Industrial Processes

PM emissions will be controlled by a filter system consisting of panel filters installed on each of the six exhaust stacks. To ensure compliance, monthly visual inspections of the filters are required, and the results recorded. The records demonstrate monthly visual inspections are performed. Compliance is expected.

15A NCAC 02D .0521 - Control of Visible Emissions

The operation is limited to 20 percent opacity visible emissions. Visible emissions are controlled by a panel filter installed on each of the six stacks. To ensure compliance monthly inspections are required, and the results will be recorded. Compliance is expected.

15A NCAC 02D .1806 – Control and Prohibition of Odorous Emissions (State-enforceable only).

The facility is required to prevent objectionable odors beyond the facility's boundary. No objectionable odors are expected. Compliance is expected.

15A NCAC 02D .1111 – MACT - 40 CFR Part 63, Subpart VVVV

The facility will comply with the open molding emission limit by using the emissions averaging option. WCG shall assure that the emission limit established by 40 CFR 63.5698, equation 1, is not exceeded using the procedures set in 40 CFR 63.5704(a). Compliance using the emissions averaging option will demonstrate on a 12-month rolling-average basis and is determined at the end of every month (12 times per year). The facility will have one year to collect data since it is a 12-month rolling standard. For the fabric adhesive operations, the HAP content must be < 5% to comply with the MACT.

WCG submitted the initial notification requirement for the MACT on November 8, 2020, when they initially submitted their application that noted applicability of MACT Subpart VVVV.

The facility will conduct daily recordkeeping of materials used and application methods as appropriate. Raw materials usages and corresponding chemical species usages will be recorded and emissions calculated as monthly and rolling 12 month cumulative totals, providing reasonable assurance of compliance with permit emission limits and to demonstrate compliance with the HAP limits of the Subpart.

The styrene and methyl methacrylate (MMA) emission factors utilized for emission calculations are taken from the Unified Emission Factor (UEF) Table and reflect the appropriate styrene or MMA content of these materials and corresponding application methods. General VOC species will be assumed to have an emission factor of 1.0, (*Emission Rate in Pounds of Styrene Emitted per Ton of Resin or Gelcoat Processed*) except for reactive species (e.g., peroxides, isocyanates and phthalates) which are assumed to have very low emission factors. When styrene is used as a solvent for mold cleaning rather than as a polymerizing unit, the emission factor will be assumed to be 1.0 (*Emission Rate in Pounds of Styrene Emitted per Ton of Resin or Gelcoat Processed*). Where styrene is polymerized, the UEF factors will be assumed to apply. MMA which may be present in gelcoat and in other materials such as adhesives, is assumed to have the same emission factor as presented in the UEF when the monomer is polymerized; otherwise, the factor will be assumed to be 1.0 (*Emission Rate in Pounds of MMA Emitted per Ton of Resin or Gelcoat Processed*).

The styrene content of the resin and gelcoat used may vary depending on a particular type, purpose, blend or supplier, and the species and concentrations of all other raw materials are subject to change, outside the control of WCG. Despite these changes, the record keeping system will track each individual species (e.g., styrene) at its actual concentration in each material used in a production capacity as identified from its accompanying material Safety Data (SD) sheet, determine the weighted rolling average concentration for MACT compliance as necessary, assign an emission factor, and determine the emissions of an individual raw material or source as well as the total facility emission. The styrene and other species contents shown for resin, gelcoat and other materials are values based on current materials and vendors, obtained from the material SD sheets, which will be made available for DAQ to review upon request. The thresholds for identifying species in the SD sheets is 1.0 % (0.1 % for carcinogenic materials), and species present at lesser concentrations may not be identified in those documents.

Non-volatile HAP species may include metals and metal compounds which may be present in some of the materials used (e.g., pigments in some gelcoats). Although these species may potentially be emitted to the air as a result of very high temperatures (e.g., combustion process), the normal use of these materials in boat building, a non-volatile species does not volatilize into the air. Since these materials are not sources of air pollution, they will not be included in the air emission calculations or considered in the HAP determination.

It should be noted that the maximum raw material usage rate is a surrogate measure of the HAP species emission rates that are the product of the usage rate, the species concentration and the emission factor for a particular species in a specific operation. If the species concentration varies up or down, or the application method changes from spray to hand, the usage rate may be adjusted accordingly to maintain compliance with a HAP emission limitation. This will allow the potential for higher cost resins and/or gelcoats with styrene contents below the MACT limits to be used at correspondingly higher levels than illustrated in the spreadsheet, or for variations in the resin/gelcoat ratio as models change, without violating the emission limits of the permit or the MACT allowable HAP limits. As a result, detailed recordkeeping was proposed for demonstrating compliance with HAP emissions limitations.

The facility proposed to comply with the requirements of MACT VVVV as applicable to their operations and will demonstrate compliance with the HAP emission limitation by the "point value" averaging method. For resins, pigmented and clear gel coats, and resin and gelcoat tooling operations, the quantity of material used in each 12-month rolling period will be determined, as well as the application method and HAP content for each material in each application. The appropriate calculations will be performed, and the facility-wide HAP calculated emissions will be compared to the HAP emissions allowed under the MACT. The facility will be considered in compliance with the HAP material content and emission limitations if the calculated HAP emissions are demonstrated to be less than or equal to the allowable HAP emissions of the Subpart. Operations involving resin infusion, a closed molding process, are exempt under MACT VVVV and will not be included in the MACT compliance demonstration. The materials applied to the surface of a closed molding mold (e.g., gelcoat, skin coat) which do not meet the definition of closed molding will be included in the MACT calculation. The material usages and emissions associated with the infusion process will be included in the facility-wide monthly and 12 month rolling usages and emissions spreadsheet to demonstrate compliance with the limitations in the permit.

The facility will be required to submit reports for each 6-month period ending on July 30 and December 31. The report shall evaluate compliance with the open molding emission limit for each 12-month averaging period ending on each six months that the report covers. The report shall be submitted within 60 days after the end of the reporting period.

Monitoring/Recordkeeping/Reporting:

The facility's monitoring/recordkeeping/reporting requirements will have to be met as noted above. WaRO will review the records at the facility for the past 12 months once completed to ensure compliance with the MACT's HAP limits and the MACT Model Point value as well as compliant coatings. Compliance is expected.

VI. NSPS/ PSD/NAA/Increment/ MACT/ CAM/ Facility-wide Toxic Air Pollutants

NSPS - This facility is not currently subject to any NSPS regulations.

PSD/NAA/Increment - This facility is a Prevention of Significant Deterioration (PSD) minor source since the potential VOC emissions (122 tpy) will be less than the major source threshold of 250 tpy. Pitt County is in an attainment area, and the non-attainment area (NAA) regulations do not apply. Pitt County has been triggered for PSD increment tracking for NOx. A review of the application indicates that there are no NOx emissions. Therefore, no increment is consumed.

MACT - This facility is subject to 40 CFR 63, Subpart VVVV (Boat Manufacturing MACT). WCG shall follow the MACT Subpart VVVV requirements and associated monitoring, recordkeeping and reporting including the periodic reporting of emissions (e.g., rolling averages of HAP emissions, etc.) as detailed above.

112(r) - This facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in the Rule. The facility is not required to maintain a written Risk Management Plan (RMP).

CAM - 40 CFR 64 requires that a continuous assurance monitoring plan be developed for all equipment located at major facilities that have pre-controlled emissions above the major source threshold and use a control device to meet an applicable standard. This facility does not utilize a control device to meet compliance with an emission limit or a standard for a federally regulated pollutant, nor does the facility have uncontrolled potential emissions greater than 100 tons per year. Therefore, CAM is not applicable to this facility.

Facility-wide Toxic Air Pollutants - This greenfield facility did not trigger toxics modeling since the six toxic air pollutants (TAPs) emitted were estimated to be below their respective Toxic Air Pollutant Permitting Emissions Rates (TPERs) as detailed below.

15A NCAC 02Q .0711 - Toxic Air Pollutants Emissions Limitation Requirement (State-enforceable only)

The facility completed an NC air toxics review in their application for six TAPs, and their emissions did not exceed the TPERs in 15A NCAC 02Q .0711. Normally, the Permittee shall maintain records of operational information demonstrating that the TAP emissions do not exceed the TPERs as listed below:

Pollutant	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)
ethylene glycol monoethyl ether (110-80-5)		5.1	2.00	
n-hexane (110-54-3)		46.3		
methyl ethyl ketone (78- 93-3)		155.8		93.19
Styrene (100-42-5)				11.16
Toluene (108-88-3)		197.96		58.97
Xylene (mixed isomers) (1330-20-7)		113.7		68.44

However, this regulation does not apply since the Responsible Official (Scott Ellis) requested that WCG be exempted from a permit to emit toxic air pollutants pursuant to 15A NCAC 02Q .0702(a)(27)(B) since the facility is subject to the Boat Building MACT Subpart VVVV. In accordance with 15A NCAC 02Q .0702(a)(27), this facility is exempt from North Carolina (NC) Air Toxics (State-only requirement); however, the NC Division of Air Quality (DAQ) is required by NC Session Law 2012-91, House Bill 952, to perform a health risk assessment.

The facility completed an NC air toxics review in their application for six TAPs, and their emissions did not exceed the TPERs in 15A NCAC 02Q .0711; however, NC DAQ was unsure if the styrene emissions presented an unacceptable health risk since the styrene hourly emissions, initially estimated just below the TPER limit of 11.16 pounds per hour (lb/hr), were calculated by dividing the annual styrene emission rate by 8,760 hours per year of operation. NC DAQ raised a question about the methodology for determining the hourly emission rate, and WCG prepared a revision to address that concern. WCG identified the expected activities for each hour of operation at the maximum capacity and determined that the styrene emissions from the gelcoat operations, conducted over an 8-hour period each day, had the potential to exceed the TPER on a 1-hour basis, although the daily and annual average values did not exceed the TPER.

WCG requested self-imposed limitations on gelcoat and resin annual usage below the levels previously requested. These reduced levels will result in reduced styrene emissions from these activities, with styrene emissions being calculated at 7.62 lb/hour based on 360 days/year, 24 hours/day of operation (*see below Table 2 of the revised TAP emissions spreadsheet submitted December 15, 2021*).

Table 2	TOXIC AIR POLLUTANTS COMPARED to 15A NCAC 02Q.0711(b)											
	styrene		methylethyl ketone		xylene		toluene		hexane		glycol ethers	
	projected	limit	projected	limit	projected	limit	projected	limit	projected	limit	projected	limit
lbs/yr	65800		396.82		225.16		16.37		2352.75		6.00	
lb/day	182.78		1.09	155.8	0.62	113.7	0.04	197.96	6.45	46.3	0.02	5.1
lb/hr*	7.62	11.16	0.05	93.19	0.03	68.44	0.002	58.97	0.27		0.001	2
*at 360 days/yr. 8640 hrs/yr												

WCG then calculated the hourly emissions associated with application of resin, gelcoat, putty, and adhesives, and when those activities would be conducted over the course of each 24-hour day (*see below Table 3 of the revised TAP emissions spreadsheet submitted December 15, 2021*).

Table 3		% of total						
		styrene	styrene emissions			hrs/day		
activity		emissions	lbs/yr	lbs/day*	lbs/hr**	activity	operation	lbs/hr
resin	41.58%		27359	76.00	3.17	resin	10	7.60
gelcoat	47.36%		31161	86.56	3.61	gelcoat	8	10.82
putty	4.62%		3039	8.44	0.35	putty	8	1.06
adhesives	6.45%		4241	11.78	0.49	adhesives	8	1.47
total			65800.00	182.78	7.62			
* at	360		days/yr operation					
** average at	24		hrs/day operation					

The results, shown in the data and graph, (*see attached Table 4 of the revised TAP emissions spreadsheet submitted December 15, 2021*), show that the styrene emissions do not exceed the TPER limit at any 1-hour period during the 24-hour operating day.

The dispersion modeling analysis approved by Matt Porter, Meteorologist with the Air Quality Analysis Branch (AQAB), on March 23, 2022, was conducted to support determination of unacceptable risks in terms of ambient impacts from styrene emissions released from resin, gelcoat, putty, and adhesive boat molding operations.

Table 1 and Table A2 of the approved dispersion modeling memo provide a conservative estimate of the facility-wide total styrene hourly emissions released through the worst-case stack (EFSP1) that would result in modeled impacts scaled to 95% of the styrene AAL. In other words, the worst-case stack (EFSP1) could be modeled at 99.77 lb/hr styrene and would result in a maximum modeled impact at 95% of the AAL (still in compliance). Note the emissions were modeled assuming 8,760 hours/year operation for each year of the 5-year meteorological database.

Table 1.
Maximum Modeled Toxics Impacts from Worst-Case Stack
World Cat Greenville, NC

Pollutant	Averaging Period	AAL ($\mu\text{g}/\text{m}^3$)	Maximum Modeled Impacts % of AAL
Styrene	1-hour	10,600	95 %

Table A2. Unit Emissions Impact Summary (*Worst-Case Stack in Bold*)

Model ID	Unit Emissions (g/s)	Unit Impact ($\mu\text{g}/\text{m}^3$)	Styrene AAL ($\mu\text{g}/\text{m}^3$)	95% AAL ($\mu\text{g}/\text{m}^3$)	95% Scaled Emissions (g/s)	95% Scaled Emissions (lb/hr)⁽¹⁾	Worst-Case Stack?
EFL1	1.0	451.09	10,600	10,070	22.32	177.18	No
EFL2	1.0	623.77	10,600	10,070	16.14	128.13	No
EFL3	1.0	538.98	10,600	10,070	18.68	148.28	No
EFL4	1.0	524.53	10,600	10,070	19.20	152.37	No
EFSP1	1.0	801.08	10,600	10,070	12.57	99.77	Yes
EFSP2	1.0	539.79	10,600	10,070	18.66	148.06	No

(1) 95% Scaled Emissions (lb/hr) = [10,600 ($\mu\text{g}/\text{m}^3$) AAL x (95%)] / [Unit Impact ($\mu\text{g}/\text{m}^3$ per 1 g/s)] x [3600 (sec/hr)] / [453.59 (g/lb)]

Not accounting for the scaling described above, the modeling performed also confirms that the maximum expected actual styrene emission rate of 10.82 lb/hr (gelcoat, as presented by WCG) results in a worst-case 1-hour impact of 10.3% (1,092 $\mu\text{g}/\text{m}^3$) of the styrene AAL (10,600 $\mu\text{g}/\text{m}^3$). Therefore, the NC DAQ believes that the styrene emissions from the facility will not present an unacceptable health risk.

VII. Public Notice / EPA and Affected State(s) Review

This permit application is being processed pursuant to the 15A NCAC 02Q .0300 provisions. As such, a public notice/hearing process is not required by rule at this step. However, since this facility is classified as a greenfield Title V, and this is the first time obtaining a construction and operating permit, a review under the Secretary's Environmental Justice provisions is triggered. Therefore, a 30-day public comment period will be part of the permitting process.

EPA and the Affected State review is not required at this time. The permit requires the submittal of a procedural 1st time Title V permit application within 12 months of the issuance date of permit (10681R00) since the facility had started operating. That application will be subject to the formal public participation process pursuant to 15A NCAC 02Q .0500 procedures.

During the initial 30-day public comment period that ended June 23, 2022, ten written comments were submitted. Most of these comments requested an extension of the comment period and in person public hearing for submission of additional comments. In response to the comments received, the Director decided to open a second comment period that opened on July 21, 2022 and closed August 29, 2022, at 5:00 pm, and to conduct a public hearing to receive additional comments.

The Hearing Officer for the public hearing was Ashby Armistead, Engineer II and Compliance Coordinator for DAQ's Wilmington Regional Office (WiRO). The public hearing was held on August 25, 2022. During the second public comment period, 27 written comments were received. Eighteen oral comments were made during the public hearing. Seven oral comments were left in the voicemail box. 26 written comments were in opposition of permit issuance, and one was in favor. One oral commenter spoke in favor of the permit while the remaining 17 oral commenters were opposed. Many commenters provided duplicate comments in both written and oral formats.

VIII. Hearing Officer Report and Recommendations:

As detailed in the Hearing Officer's Report (HOR) and in response to the commenters' concerns regarding the cumulative emissions impacts with special regards to Grady-White Boats, Inc. (G-W)'s styrene emissions, the Hearing Officer recommended, and the Director agreed to model the combined actual styrene emissions from both WCG and G-W.

Mark Yoder, Meteorologist with DAQ's AQAB, performed the dispersion modeling as requested and his findings are detailed in the Dispersion Modeling Memorandum dated September 19, 2022.

Modeled source release parameters and emissions rates for two worst-case point sources are provided in Table A1 below. Point sources at both facilities were evaluated to identify stack parameters with the worst-case hourly ambient impact. Actual emissions rates, obtained from WCG's application and G-W's emissions inventory data, were used for the facilities, and assigned to the worst-case stacks. Note the emissions were modeled assuming 8,760 hours/year operation for each year of the 5-year meteorological database.

Table A1. Worst-case Modeled Release Parameters and Emissions Rates

Model ID	Description	X-utm (m)	Y-utm (m)	Elev. (m)	Release Ht. (m)	Exit Temp. (K)	Exit Vel. (m/s)	Stack Diam. (m)	CAPped or HORIZontal?	Styrene (lb/hr)
G-W	Worst-case stack	287457.2	3947599.09	7.62	13.7	298.	15.2	0.76	No	44.2
WCG	Worst-case Stack	286855.0	3947715.0	8.55	12.04	293.15	23.01	0.91	No	10.82

Maximum modeled styrene emissions impacts are shown in Table 1 below as a percentage of the applicable AAL.

**Table 1
Maximum Modeled Toxics Impacts from Worst-Case Stacks
World Cat Greenville and Grady-White, NC**

Pollutant	Averaging Period	AAL ($\mu\text{g}/\text{m}^3$)	Maximum Modeled Impacts % of AAL
Styrene	1-hour	10,600	21.5 %

The modeling performed confirms that the actual styrene emission rates as presented in Table A1 above results in a worst-case 1-hour impact of 21.5% ($2,297 \mu\text{g}/\text{m}^3$) of the styrene AAL ($10,600 \mu\text{g}/\text{m}^3$). Therefore, the NC DAQ believes that the styrene emissions from the two facilities will not present an unacceptable health risk.

Conclusions and Recommendations from Ashby Armistead, DAQ Hearing Officer

Many commenters are very passionate about the World Cat Greenville draft permit as evidenced by the thorough, thoughtful, and detailed comments which were submitted. The DAQ sincerely appreciates the time, effort, opinions, and interest in providing comments and attending the hearing for the WCG permit application and draft permit.

The goal in responding to those comments and preparing this report was to honor them by spending a significant amount of effort researching and responding to those comments.

After thoroughly considering all public comments addressing issuance of the proposed draft air quality permit (Permit No. 10681R00) to WCG for the construction and operation of a new fiberglass boat manufacturing facility, no permitting errors were identified. Additionally, no technical comments were received that indicated the DAQ was lacking in its evaluation of the application or construction of the current draft permit.

Therefore, it is the recommendation of the Hearing Officer to issue the draft air permit as written. It is expected that following the Conditions in the draft air permit will result in WCG complying with all applicable State and Federal Air Quality Regulations.

Additionally, it is recommended that DAQ staff remain sensitive to the health of the nearby communities and their concerns. This can be accomplished by thorough facility inspections and prompt responses to the citizens air quality concerns and complaints

IX. RCO Conclusions and Recommendations:

A professional engineer's seal was not required for this permit modification.

A consistency determination was required for this permit modification. Ms. Chantae Gooby, Chief Planner with the City of Greenville, confirmed this proposed operation is consistent with local zoning ordinances on January 7, 2021.

Recommend issuance of Permit No. 10681R00.

Table 4 of the revised TAP emissions spreadsheet submitted December 15, 2021

Table 4			AM										PM											
	12:01:00 -1.00	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
resin									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y						
gelcoat	Y	Y	Y	Y	Y	Y	Y	Y																
putty										Y	Y	Y	Y	Y	Y	Y	Y							
adhesives										Y	Y	Y	Y	Y	Y	Y	Y							
	styrene lbs per hour emitted per activity																							
	AM												PM											
	12:01:00 -1.00	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
resin	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	0.00	0.00	0.00	0.00	0.00	0.00
gelcoat	10.82	10.82	10.82	10.82	10.82	10.82	10.82	10.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
putty										1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
adhesives										1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47
total/hr	10.82	10.82	10.82	10.82	10.82	10.82	10.82	10.82	7.60	10.13	10.13	10.13	10.13	10.13	10.13	10.13	10.13	10.13	2.53	2.53	2.53	2.53	2.53	2.53
lbs/hr per exhaust	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.27	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	0.42	0.42	0.42	0.42	0.42	0.42
AM												PM												
0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	
11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16	
10.82	10.82	10.82	10.82	10.82	10.82	10.82	10.82	10.82	7.60	10.13	10.13	10.13	10.13	10.13	10.13	10.13	10.13	10.13	2.53	2.53	2.53	2.53	2.53	