NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Permit Issue Date: XX

Region: Asheville Regional Office
County: Mitchell
NC Facility ID: 6100088
Inspector's Name: Mike Parkin
Date of Last Inspection: 08/04/2005
Compliance Code: C/In Compliance With Procedural Reqr

Facility Data	Permit Applicability (this application only)
Applicant (Facility's Name): BRP US Inc. - Spruce Pine **Facility Address:** BRP US, Inc. - Spruce Pine 1211 Greenwood Road Spruce Pine, NC 28777 **SIC:** 3365 / Aluminum Foundries **NAICS:** 331524 / Aluminum Foundries except Die Casting **Facility Classification: Before:** Title V **After:** Title V **Fee Classification: Before:** Title V **After:** Title V	**SIP:** X **NSPS:** **NESHAP:** **PSD:** **PSD Avoidance:** **NC Toxics:** **112(r):** **Other:**

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Bernice Wilson (828) 766-1185 1211 Greenwood Road Spruce Pine NC, 28777	William Johnson Director of Manufacturing (828) 766-1100 1211 Greenwood Road Spruce Pine NC, 28777	Bernice Wilson Environmental Coordinator (828) 682-1956 1211 Greenwood Road Spruce Pine NC, 28777

Application Data

Application Number: 6100088.06A
Date Received: 02/28/2006
Application Type: Renewal
Application Schedule: TV-Renewal

Existing Permit Data
Existing Permit Number: 05331/T15
Existing Permit Issue Date: 08/31/2006
Existing Permit Expiration Date: 11/30/2006

Review Engineer: Kevin Godwin

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 05331/T16
Permit Issue Date: XX
Permit Expiration Date: XX

1. Purpose of Application

This revision is a renewal of existing Title V permit 05331T15 pursuant to 15A NCAC 2Q .0513. The Title V permit is set to expire on November 30, 2006. The renewal application was received on February 28, 2005 or at least nine months prior to the expiration date. Therefore, the existing permit shall not expire until the renewed permit has been either issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewed permit has been issued or denied.

2. Facility Description

BRP US Inc. operates a lost foam aluminum casting facility at this Mitchell County site. Processes include polystyrene molded foam operations, two aluminum casting lines, shot blasting operations, and heat treating operations. Two natural gas/propane-fired boilers are used to supply process heat.

3. Permit Modification/Changes

The initial Title V permit (**05331T11**) was issued on December 12, 2001 and became effective on January 29, 2002.

On March 31, 2004, P/N **05331T12** was issued as a significant modification under 15A NCAC 2D .0516 to replace an existing catalytic oxidizer (ID No. CD-3) with a new regenerative thermal oxidizer (RTO, ID No. CD-3). Also, VOC emissions from a paint spray booth were placed under the existing 250 tpy PSD avoidance limit.

On September 24, 2004, P/N **05331T13** was issued as an administrative amendment under 15A NCAC 2D .0514 to change the name from Bombardier Motor Corporation of America to BRP US Inc.

On June 9, 2005, P/N **05331T14** was issued as a 502(b)(10) change under 15A NCAC 2D .0523 to include an existing bagfilter (ID No. CD-15) installed in series with the new RTO. The bagfilter was originally installed along with the RTO, but was inadvertently left off the application used to permit the RTO.

On August 31, 2006, P/N **05331T15** was issued as a minor modification under 15A NCAC 2Q .0515 to add a shot blast machine #7 (ID No. ES-50), replace the existing bagfilter (ID No. CD-7) with a new bagfilter (ID No. CD-16), delete a shot blast machine (ID No. ES-32-3).

4. Application Chronology

February 28, 2005	Renewal application for BRP US Inc. deemed complete.
September 6, 2005	Air dispersion modeling approved (ref. Tom Anderson, Air Quality Analysis Branch)
March 28, 2006	Stack test approved (ref. Paula Hemmer, SSCB)
August 29, 2006	Draft to Title V Coordinator
August 31, 2006	Draft to Asheville Regional Office (ARO) and applicant
September 19, 2006	Corrected draft based on comments from ARO and applicant.
, 2006	Proposed permit to Public Notice and EPA
, 2006	Permit issued

5. Regulatory Review

BRP US Inc. is subject to the following regulations:

15A NCAC 2D .0503 “Particulates from Fuel Burning Indirect Heat Exchangers”
15A NCAC 2D .0515 “Particulates from Miscellaneous Industrial Processes”
15A NCAC 2D .0516 “Sulfur Dioxide Emissions from Combustion Sources”
15A NCAC 2D .0521 “Control of Visible Emissions”
15A NCAC 2D .0535 “Excess Emissions Reporting and Malfunctions”
15A NCAC 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”
15A NCAC 2D .1100 “Control of Toxic Air Pollutants”
15A NCAC 2D .1111 “Maximum Achievable Control Technology – Subpart MMMM”
15A NCAC 2D .1806 “Control and Prohibition of Odorous Emissions”
15A NCAC 2Q .0705 “Existing Facilities and SIC Calls”
15A NCAC 2Q .0711 “Emission Rates Requiring a Permit”

Except as noted below, no applicable regulations are being affected by this permit renewal so a regulatory review is not required.

Below is a summary of actual facility-wide criteria pollutant emissions based on 2004 emissions inventory information.

Pollutant	Emission Rate (tpy)
Carbon monoxide	6.84
Nitrogen oxides	6.58
Particulate matter less than 10 microns	5.96
Sulfur dioxide	0.03
Volatile organic compounds	20.13

The following table summarizes the changes to the existing permit:

Pages	Section	Description of Change
Cover letter	Cover letter	Modified to reflect current permit number, issue and effective date, and associated application information.
Insignificant activities list	N/A	As per August 8, 2005 inspection report, included chrome conversion process and burn-off oven in insignificant activities list.
Insignificant activities list	N/A	Updated insignificant activities list as per renewal application
9	2.2 A.1.	Amended facility-wide NC toxic air pollutant (TAP) restrictions based on recently approved stack testing and modeling.
11	2.2 A.1.d.	Removed TAP testing requirement.
11	2.2 B.1.	Included NC TAP compliance demonstration requirement per 15A NCAC 2Q .0705.
12	2.2 B.5.	Included placeholder language for MACT Subpart MMMM (final compliance date January 2, 2007).
13	2.2 C.	Removed PSD avoidance stipulation.
24	Part II	Removed Part II for construction of RTO and bagfilter (ID Nos. CD-3 and CD-15)
13	3	Updated General Conditions to most recent shell language.

6. NSPS, NESHAPS, PSD, Attainment Status, 112(r), and CAM

NSPS

The equipment at the BRP facility is not NSPS-affected.

NESHAPS/MACT

NESHAP, Subpart MMMM "Miscellaneous Metal Parts Coating" applies to the metal coating operations at this facility. The final compliance date for Subpart MMMM is January 2, 2007. BRP has indicated it will use the compliant coatings option to comply with the emission standards of this subpart. A condition is included in the renewed permit requiring the facility to comply with Subpart MMMM by January 2, 2007 (Specific Condition 2.2 B.5).

The aluminum remelt furnace (ID No. ES-36) is used only to reprocess on-site scrap. Therefore, this equipment is not subject to the secondary aluminum NESHAP, Subpart RRR.

The two existing propane/natural gas-fired boilers (14.7 million Btu per hour heat input each, ID Nos. ES-37 and ES-44) are subject to NESHAP Subpart DDDDD "Industrial, Commercial, and Institutional Boilers and Process

Heaters". The boilers fall under Population II (existing, gas-fired, >10 million Btu/hr). For Population II boilers, there are no emission limits only initial notification requirements under 63.7545.

PSD

BRP is classified as a minor source with regards to PSD. Prior to installing the new RTO and making improvements in system ductwork/capture efficiency in 2004, BRP had conservatively estimated potential facility-wide after control VOC emissions to be greater than 250 tpy. To be classified as a PSD minor source, BRP decided to take a limit of less than 250 tpy VOC. On August 3, 2005, BRP tested the RTO controlled sources at the facility and found potential VOC emissions from all sources facility-wide (controlled and uncontrolled) to be less than 250 tpy. Testing results were approved by DAQ - Stationary Source Compliance Branch on March 28, 2006.

BRP established an after control VOC emission factor from the RTO based on the approved stack testing (1.13 x 10^{-3} lb/lb Al poured). Potential facility-wide VOC emissions from both controlled and uncontrolled sources are reported in the renewal application as 180 tpy. Since potential VOC emissions are less than 250 tpy, BRP is a true minor PSD source. The PSD avoidance condition is no longer necessary and is removed upon this permit revision.

Attainment Status

Mitchell County is in attainment for all pollutants.

112(r)

According to the renewal application, this facility does not store any chemicals regulated under 112(r) above the applicable thresholds.

CAM

Pursuant to 15A NCAC 2D .0614, a compliance assurance monitoring (CAM) applicability determination is required for this renewal because: (1) the facility is a Title V source with potential emissions that exceed the Title V major source thresholds without considering controls; and (2) there are sources subject to an emission standard that require controls in order to comply with that standard.

The table below provides a summary of sources and control devices potentially subject to CAM along with emissions estimates reported in the renewal application.

Emission Source	**Control Device**	**Pre-control Emissions (tpy)**	**Post-control Emissions (tpy)**
Fresh sand bin No. 1 (ID No. ES-10) and Sand recirculation system (ID No. ES-11)	Bagfilter (1,295 ft^2 of filter area, ID No. CD-1)	PM_{10} = 78.7	PM_{10} = 0.79
Fresh sand bin No. 2 (ID No. ES-20) and sand recirculation system (ID No. ES-22)	Bagfilter (9,986 ft^2 of filter area, ID No. CD-2)	PM_{10} = 78.7	PM_{10} = 0.79
Shot blast machines Nos. 4, 5, and 7 (ID Nos. ES32-4, ES32-5, ES-50)*	Bagfilter (200 ft^2 of filter area, ID No. CD-16)	PM_{10} = 2.1	PM_{10} = 0.02
Pour station castlines No. 1 and No. 2 (ID Nos. ES-12 and ES-23), Cooling tunnel castlines No. 1 and No. 2 (ID Nos. ES-13 and ES-24), Shakeout castlines No. 1 and No. 2 (ID Nos. ES-14 and ES-25), and Quench station castlines No. 1 and No. 2 (ID Nos. ES-15 and ES-26)	Bagfilter (14,726 ft^2 of filter area, ID No. CD-15)	PM_{10} = 2.2	PM_{10} = 0.52
One sand reclamation system (ID No. ES-34)	Bagfilter (1,272 ft^2 of filter area, ID No. CD-13)	PM_{10} = 83.2	PM_{10} = 0.83

PM_{10} emissions estimates are made based on material balance.

*On July 20, 2006, the applicant provided an update of emission sources, a new control device, and emissions calculations relating to shot blast machines (ID Nos. ES-4, ES-5, and ES-50). Pre-control PM_{10} emissions are calculated based on AP-42 emission factor for abrasive blasting (13.0 lb PM_{10}/1000 lb shot).

Since pre-control emissions are below 100 tpy, the above sources are exempt from CAM.

CAM is not applicable to the RTO because there is no emission standard pertaining to VOC emissions from the controlled sources. VOC emissions are based on testing the RTO inlet and outlet.

7. Facility-wide North Carolina Toxic Air Pollutants

The toxic air pollutant (TAP) section of the permit is revised based on updated stack testing results. BRP established emission factors for benzene and styrene based on approved stack testing (3.07×10^{-5} lb benzene/lb Al poured and 4.65×10^{-4} lb styrene/lb Al poured). The emission factors are the average of three test runs. Along with these emission factors, BRP proposes a maximum aluminum pour rate of 24,000,000 lb/year to remain in compliance with the benzene and styrene limits.

The existing permit includes modeled limits from the aluminum castlines and sand reclamation process for styrene emissions (35 lb/hr), 1,3 butadiene emissions (2439.6 lb/yr), and benzene emissions (1,772.1 lb/yr), pursuant to 2D .1100. These limits are not valid since the original modeling did not include fugitive emissions from roof vents. Most recent modeling includes TAP emissions from both the RTO stack and three roof vents.

Based on a pre-survey sampling performed by Trigon Engineering Consultants, 1,3 butadiene concentrations at the RTO exhaust stream are less than the method detection limit (10 ppb). A letter from Shannon M. Vogel (Stationary Source Compliance Branch) dated May 2, 2005 states "based on the pre-survey sampling results, DAQ is not requiring additional 1,3 butadiene testing at the RTO outlet." Since 1,3 butadiene is not detected in the exhaust stream, it is removed from the 2D .1100 TAP condition and placed under the existing 2Q .0711 TPER condition.

An increase in facility-wide TAP emissions is not expected with this renewal. However, in order to determine compliance air dispersion modeling was performed at the request of the ARO.

On September 6, 2005, DAQ Analysis Branch approved a modeling exercise using the CALPUF model by stating "the maximum predicted benzene impact was 16% of the annual AAL." The table below provides a summary of modeled emission rates based on stack test results.

Emission Point		**Modeled Emission Rate (lb/hr)**	
ID	Description	Styrene	Benzene
EP-14	RTO Stack	2.65	0.1520
VNT01	Vent	0.049	0.007
VNT02	Vent	0.0217	0.0031
VNT03	Vent	0.0542	0.0078
	TOTALS	2.78	0.170

The following new limits used to ensure compliance with the acceptable ambient level (AAL) are placed in the permit: 1,488.3 lb/yr of benzene and 150 lb/hr of styrene. The 2D .1100 condition is modified to allow the facility to track and record the amount of aluminum poured (in pounds). The aluminum pour rate multiplied by the appropriate emission factor will be used to determine compliance with the TAP limits as follows:

Benzene emissions = (24,000,000 lb Al poured)(3.07×10^{-5} lb benzene/lb Al poured) = 736.8 lb/yr
Styrene emissions will be calculated by multiplying the daily aluminum pour rate by 4.65×10^{-4} lb styrene/lb Al poured.

Existing RTO operational and monitoring requirements will remain in the renewed permit.

The existing permit also includes the standard TAP condition listing the TPER pursuant to 2Q .0711 for hydrogen chloride, chlorine, toluene, and xylene.

A condition referencing the requirements of 15A NCAC 2Q .0705 is included in this renewal. This condition requires a facility-wide TAP compliance demonstration as of the final MACT compliance date.

8. Facility Compliance Status

The DAQ has reviewed the compliance status of this facility. BRP was last inspected by Mr. Mike Parkin (ARO) on August 8, 2005. At the time of inspection, BRP was found to be in compliance with the requirements of the permit.

The applicant has certified that the facility will be in compliance with all applicable requirements at the time of permit issuance and will continue to comply with these requirements. The applicant also certified that the facility will be in compliance with any applicable requirements taking effect during the term of the permit and will meet such requirements on a timely basis.

9. Stipulation Review

A. New stipulations are as follows:

Section 2.2 B.1.; included state-only TAP compliance demonstration requirement in accordance with 2Q .0705.
Section 2.2 B.5.; included MACT placeholder language (Subpart MMMM final compliance date January 2, 2007) in accordance with 15A NCAC 2D .1111.

B. Modified stipulations are as follows:

Section 2.2 A.1.; modified state-only 2D .1100 TAP condition to include a maximum aluminum pour rate (24,000,000 pounds per year) and associated controlled emission factors for benzene (3.07×10^{-5} lb/lb aluminum poured) and styrene (4.65×10^{-4} lb/lb aluminum poured).

Also, removed 1,3 butadiene from 2D .1100 condition and put limits on benzene (1,488.3 lb/yr) and styrene (150 lb/hr) emissions.

C. Removed PSD avoidance condition as described above.

10. Public Notice/EPA and Affected States Review

Pursuant to 15A NCAC 2Q .0521, a notice of the draft Title V permit will be placed in the legal classified section of 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 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit will be provided to EPA. Also pursuant to 2Q .0522, a notice of the draft Title V permit will be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. Tennessee is an affected state for this facility.

11. Conclusions, Recommendations, and Comments

The renewal Title V application for BRP US Inc. has been reviewed by the DAQ to determine compliance with all procedures and requirements under 15A NCAC 2Q .0500 and 40 CFR Part 70. Following public notice and EPA review, the DAQ permits section proposes to issue the Title V permit renewal.

12. Miscellaneous Requirements

PE Seal

Pursuant to 2Q .0112, no PE Seal was required because the permit renewal does not involve the determination of applicability and appropriateness or performance of air pollution capture and control systems [15A NCAC 2Q .0112(b)(2) and (3)].

Zoning

A request for zoning consistency determination is not required for this permit renewal.

Fee Classification

Based on potential to emit, this facility has been classified as **Title V Major**. The facility's current IBEAM status is **Title V Major**. This renewal **will not** change the fee classification.