

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Air Permit Review**

Permit Issue Date: **date, 2009**

**Region:** Winston-Salem Regional Office  
**County:** Davidson  
**NC Facility ID:** 2900049  
**Inspector's Name:** Stephen Moser  
**Date of Last Inspection:** 01/29/2009  
**Compliance Code:** 3 / Compliance - inspection

<b>Facility Data</b>			<b>Permit Applicability (this application only)</b>
<b>Applicant (Facility's Name):</b> Linwood Furniture, Inc.  <b>Facility Address:</b> Linwood Furniture, Inc. 3979 Old Linwood Road Linwood, NC 27292  <b>SIC:</b> 2511 / Wood Household Furniture <b>NAICS:</b> 337122 / Nonupholstered Wood Household Furniture Manufacturing  <b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V			<b>SIP:</b> <b>NSPS:</b> <b>NESHAP:</b> <b>PSD:</b> <b>PSD Avoidance:</b> <b>NC Toxics:</b> <b>112(r):</b> <b>Other:</b>
<b>Contact Data</b>			<b>Application Data</b>
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<b>Application Number:</b> 2900049.09A <b>Date Received:</b> 02/19/2009 <b>Application Type:</b> Renewal <b>Application Schedule:</b> TV-Renewal <b>Existing Permit Data</b> <b>Existing Permit Number:</b> 02045/T20 <b>Existing Permit Issue Date:</b> 04/24/2006 <b>Existing Permit Expiration Date:</b> 11/30/2009
Bryan Starnes V.P. Operations (336) 956-1095 P.O. Box 909 Linwood NC, 27299	Bryan Starnes V.P. Operations (336) 956-1095 P.O. Box 909 Linwood NC, 27299	Bryan Starnes V.P. Operations (336) 956-1095 P.O. Box 909 Linwood NC, 27299	
<b>Review Engineer:</b> Mark Cuilla  <b>Review Engineer's Signature:</b> <b>Date:</b> <b>date, 2009</b>		<b>Comments / Recommendations:</b> Issue 02045/T21 <b>Permit Issue Date:</b> <b>date, 2009</b> <b>Permit Expiration Date:</b> <b>date, 2014</b>	

**I. Purpose of Application**

This permitting action is a renewal of an existing Title V permit pursuant to 2Q .0513. The existing Title V permit (**02045T20**) was issued on **April 24, 2006**, and is scheduled to expire on **November 30, 2009**. The renewal application was received on **February 19, 2009**, or at least nine months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

**II. Facility Description**

The facility is a wooden furniture manufacturer.

### III. History/Background/Application Chronology

**February 19, 2009** – Permit application **2900049.09A** was received for the renewal of the Title V air permit.

**March 13, 2009** – Received WSRO comments and recommendations on the renewal application from Mr. Steve Moser.

**March 18, 2009** – DRAFT permit sent to Permittee for comment prior to public notice and EPA review. WSRO has commented that it does not need to see the DRAFT prior to public notice or issuance.

**Date, 2009** – DRAFT sent to 30-day public notice and 45-day EPA review prior to issuance.

### IV. Permit Modifications/Changes and ESM Discussion

The following table describes the modifications to the current permit as part of the renewal process.

Pages	Section	Description of Changes
Attachment	Insignificant activities	-amended permit revision number
Cover	-	-amended permit revision numbers and all dates
TOC	-	-removed reference to Part II (here and throughout the permit)
All	Header	-amended permit revision number
3-4	Equipment table	-grouped finishing operations under one row (all ID numbers begin with "F-1") -updated boiler descriptions and clarified control device arrangement
5	2.1 A (table)	-added MACT title and subpart reference
5-6	2.1 A.1.b	-added ID numbers and updated shell language
6	2.1 A.1.c 2.1 A.1.e 2.1 A.2.a 2.1 A.2.b 2.1 A.2.c	-updated shell language -updated shell language -added ID numbers -corrected testing rule cross reference -added ID numbers and updated shell language
6-7	2.1 A.2.d	-updated shell language
7	2.1 A.2.e 2.1 A.3.d	-updated shell language -updated shell language
8	2.1 B.1.a 2.1 B.1.b 2.1 B.1.c 2.1 B.2.a 2.1 B.2.b 2.1 B.2.c 2.1 B.2.e	-added ID numbers -corrected testing rule cross reference -added ID numbers and updated shell language -added ID numbers -corrected testing rule cross reference -added ID numbers -added ID numbers and updated shell language
9	2.1 B.2.f 2.1 B.2.g  2.1 B.3.a 2.1 B.3.c 2.1 B.3.d	-updated shell language -added "no reporting" language for No. 2 fuel oil and natural gas combustion  -corrected testing rule cross reference -added ID numbers and updated shell language -updated shell language

<b>Pages</b>	<b>Section</b>	<b>Description of Changes</b>
10	2.1 B.3.f 2.1 B.3.g  2.1 C.1.c	-updated shell language -added “no reporting” language for No. 2 fuel oil and natural gas combustion -corrected testing rule cross reference
10-11	2.1 C.1.d	-added ID numbers and updated shell language
11	2.1 C.1.e 2.1 C.1.f 2.1 C.1.g 2.1 C.2.a 2.1 C.2.b 2.1 C.2.c 2.1 C.3.b	-updated shell language -added ID numbers -updated shell language -added ID numbers -corrected testing rule cross reference -added ID numbers and updated shell language -corrected testing rule cross reference
12	2.1 C.3.c 2.1 C.3.d 2.1 C.3.e 2.1 C.4.c	-added ID numbers and updated shell language -updated shell language -updated shell language -corrected testing rule cross reference
13	2.1 C.4.e 2.1 D 2.1 D.1.b	-updated shell language -clarified equipment description -added ID numbers and updated shell language
13-14	2.1 D.1.c	-updated shell language
14	2.1 D.1.e 2.1 D.2.b 2.1 D.2.c	-updated shell language -corrected testing rule cross reference -added ID numbers and updated shell language
14-15	2.1 D.2.d	-updated shell language
15	2.1 D.2.e 2.1 F (table)	-updated shell language -added MACT title
25	2.2 B.1  2.3 A 2.3 A (table) 2.3 A.1	-updated shell language -removed all language referencing the vacated boiler MACT -clarified applicable equipment list -clarified emission limit -updated shell language
26-35	General Conditions	-updated shell conditions (v2.22.1)

*Note. ESM was modified to edit equipment and control device descriptions using current guidance. No sources were added or end-dated as part of this permit renewal.*

## V. Regulatory Review

The facility is currently subject to the following regulations:

- 15A NCAC 2D .0503, Particulates from Fuel Burning Indirect Heat Exchangers
- 15A NCAC 2D .0504, Particulates from Woodburning Indirect Heat Exchangers
- 15A NCAC 2D .0512, Particulates from Miscellaneous Wood Products Finishing Plants
- 15A NCAC 2D .0516, Sulfur Dioxide Emissions from Combustion Sources
- 15A NCAC 2D .0521, Control of Visible Emissions
- 15A NCAC 2D .1111, Maximum Achievable Control Technology (40 CFR 63, Subparts JJ and DDDD)
- 15A NCAC 2D .1806, Control and Prohibition of Odorous Emissions
- 15A NCAC 2Q .0317, Avoidance Conditions (for 15A NCAC 2D .0530, Prevention of Significant Deterioration)
- 15A NCAC 2Q .0705, Existing Sources and SIC Calls

A regulatory review for the existing sources will not be included in this document. It should be noted that the current permit includes a reference to the once promulgated boiler MACT (40 CFR 63, Subpart DDDDD) for one applicable boiler. This Federal requirement has been vacated by the US Court System; therefore, the reference to the regulation has been removed as part of this permit renewal process. Applicability to any future combustion MACT will need to take place when promulgated.

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

**NSPS** – The facility is not currently subject to any New Source Performance Standards. This permit renewal does not affect this status.

**NESHAPS/MACT** – The facility is currently subject to the following Maximum Achievable Control Technology Standards:

1. National Emission Standards for Hazardous Air Pollutants from Wood Furniture Manufacturing Operations (40 CFR 63, Subpart JJ). This regulation applies to the wood furniture finishing operation (**ID No. F-1**) consisting of all spray booths, bake ovens, dip tanks, wash-off tanks, day-tanks, and gluing operations. This permit renewal does not affect this status.
2. National Emission Standards for Hazardous Air Pollutants from Plywood and Composite Wood Products (40 CFR 63, Subpart DDDD). This regulation applies to the eight lumber drying kilns (**ID Nos. DK-1 through DK-8**). While applicable, the regulation has no requirements other than initial notification for these units. This permit renewal does not affect this status.

**PSD** – The facility is currently subject to the following Prevention of Significant Deterioration Avoidance conditions:

1. Emissions of volatile organic compounds from one spray booth (**ID No. F-1-19**) shall be less than 40 tons per consecutive 12-month period. Compliance is indicated through monthly VOC calculations determined by multiplying the total amount of each type of VOC-containing material consumed by its VOC content. This permit renewal does not affect this status.
2. Emissions of nitrogen oxides from the wood-fired boiler (**ID No. B-3**) shall be less than 40 tons per consecutive 12-month period. Compliance is indicated by firing no more than 11,000 tons of wood during any 12-month period. This permit renewal does not affect this status.

**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 thresholds in the Rule. This permit renewal does not affect this status.

**CAM** – 40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility, that have pre-control emissions above the major source threshold, and use a control device to meet an applicable standard. The following table indicates the current equipment/control device relationships:

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Control Device ID No.</b>	<b>Control Device Description</b>
<b>Boilers</b>			
B-1	One wood fuel-fired boiler (44.4 million Btu per hour maximum heat input capacity)	MC-1	One multicyclone (30 nine-inch diameter tubes)
B-3	One wood fuel-fired boiler (20.6 million Btu per hour maximum heat input capacity)	MC-2	One multicyclone (90 three and one quarter inch diameter tubes)
<b>Woodworking Operations</b>			
WD-1	Woodwaste collection system	DF-1 through DF-3  DF-4 and DF-5  DF-7  DF-8	Three bagfilters (5,766 square feet of filter area each)  Two bagfilters (4,614 square feet of filter area each)  One bagfilter (6,924 square feet of filter area)  One bagfilter (7,045 square feet of filter area)
WT-1	Wood hog and woodwaste transfer operation including six transfer cyclones (ID Nos. CD-C1 through C6), and two dust silos (ID Nos. S-1 and S-2)	DF-6	One bagfilter (5,766 square feet of filter area)

The renewal application indicates that CAM is not applicable to this facility for the following reasons.

**Boilers (ID Nos. B-1 and B-3)** – These wood-fired boilers are each controlled by multicyclones (**ID Nos. MC-1 and MC-2**) as described above. DAQ combustion spreadsheets were used to determine potential PM<sub>10</sub> emissions from these sources. Potential emissions were estimated at 73.32 and 34.02 tons per year respectively. Therefore, non-applicability is confirmed.

Woodworking operations (ID Nos. WD-1 and WT-1) – These operations are controlled by eight bagfilters (ID Nos. DF-1 through DF-8) as shown above. Each bagfilter controls separate group processes and therefore can be looked at separately for CAM applicability. The Permittee used the DAQ woodworking spreadsheet to determine potential PM<sub>10</sub> emissions feeding each bagfilter according to the process make-up (e.g., hogging, molding, sanding, etc) and the amount of actual board feet of wood waste generated based on 1664 hours of operation scaled up to 8760 hours potential. The Permittee estimates PM<sub>10</sub> emissions as follows confirming non-applicability:

Control Device ID	Process Description	Total Particulate (tpy)*	% PM <sub>10</sub> **	PM <sub>10</sub> (tpy – uncontrolled)
DF1	milling/hog (80%) molding (15%) sanding (5%)	481.27	0 0 23.8	0 0 5.72
DF2	fine sawing (20%) milling/hog (20%) molding (60%)	24.06	0.37 0 0	0.02 0 0
DF3	milling/hog (50%) molding (50%)	240.63	0 0	0 0
DF4	fine sawing (50%) milling/hog (15%) molding (5%) sanding (30%)	96.25	0.37 0 0 23.8	0.18 0 0 6.87
DF5	fine sawing (5%) sanding (95%)	48.13	0.37 23.8	0.01 10.88
DF6	sanding (100%)	72.19	23.8	17.18
DF7	planning (10%) milling/hog (29%) molding (60%) sanding (1%)	1203.17	0 0 0 23.8	0 0 0 2.86
DF8	milling/hog (50%) molding (50%)	240.63	0 0	0 0

\*Total particulate is based on the actual amount of board feet of wood processed in 1664 hours of operation scaled up to 8760 hours and 3.9 pounds particulate matter per board feet wood waste. (1,378,862 bd ft) x (17% waste) = 234,406 bd ft (actual waste) x (8760/1664) = 1,234,015 bd ft (1,234,015 bd ft) x (3.9 lbs particulate/bd ft) x (1 ton/2000 lbs) = 2406.33 tons (total potential waste divided into the eight bagfilters as shown above)

\*\*Percent PM<sub>10</sub> based on NC woodworking emission spreadsheet (planning 0%, shaving/chipping 0%, rough sawing 1.89%, fine sawing 0.37%, milling/molding 0%, and sanding 23.8%)

## VII. Facility Wide Air Toxics

The facility is not currently subject to the NC Air Toxics Program. However, because the facility is subject to a MACT for non-exempt equipment, it is subject to 15A NCAC 2Q .0705, Existing Sources and SIC Calls. This regulation requires that the Permittee be in compliance with NC Air Toxics by the same deadline of the last MACT applicable to the facility. The applicability to the Plywood MACT (Subpart DDDD) for the eight drying kilns triggers the requirement to comply with this regulation. The Permittee has confirmed and the WSRO agrees that the kilns, when operating, only dry hardwoods. DAQ has determined that there is no expected air toxic emissions from the drying of hardwoods; therefore, the Permittee is in compliance with 2Q .0705 and has been in compliance since the requirement to comply with the last MACT. The current permit requires that *“for sources at a facility subject to a MACT standard, a permit application shall be required demonstrating compliance with the 15A NCAC 2D .1100 in accordance with the schedules included therein.”* This language has been replaced in the renewed permit indicating compliance.

## VIII. Facility Emissions Review

The following table represents the latest years emission inventory from the facility:

Pollutant(s)	2007 Actual Emissions (tpy)
CO	18.13
NO <sub>x</sub>	14.80
PM <sub>10</sub>	11.38
SO <sub>2</sub>	0.76
VOC	49.27
Total HAP/TAP	4.48

## IX. Stipulation Review

The facility was last inspected on **January 29, 2009** by Mr. Steve Moser of the WSRO. At that time, “the facility appeared to be in compliance with all permitting requirements.”

Verification, through email, indicates that WSRO does not request that the two wood-fired boilers (**ID Nos. B-1 and B-3**) be tested for particulate matter during the next permitting cycle.

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

Pursuant to 15A NCAC 2Q .0521, a notice of the DRAFT Title V Permit shall 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 shall 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 shall be provided to EPA. Also pursuant to 2Q .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 2Q .0521 above. The Mecklenburg County and Forsyth County Local Programs are affected programs within 50 miles of the facility.

## **XI. Conclusions, Comments, and Recommendations**

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

A consistency determination was not required for this renewal.

WSRO recommends issuance of the permit and did not request a DRAFT permit prior to notice and issuance.

RCO concurs with WSRO's recommendation to issue the renewed air permit.