

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date: MM/DD/YYYY

Region: Asheville Regional Office
County: McDowell
NC Facility ID: 5600169
Inspector's Name: Brendan Davey
Date of Last Inspection: 04/08/2008
Compliance Code: C/In Compliance With
 Procedural Reqr

Facility Data			Permit Applicability (this application only)		
Applicant (Facility's Name): JELD-WEN, Inc. Facility Address: JELD-WEN, Inc. 100 Henry McCall Road Marion, NC 28752 SIC: 2493 / Reconstituted Wood Products NAICS: 321219 / Reconstituted Wood Product Manufacturing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: 2D .0614 CAM, 2D.1111 NSPS: NESHAP: Subpart DDDD, QQQQ PSD: PSD Avoidance: NC Toxics: 112(r): Other:		
Contact Data			Application Data		
Facility Contact	Authorized Contact	Technical Contact	Application Number: 5600169.06D Date Received: 11/09/2006 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 06486/T13 Existing Permit Issue Date: 02/19/2008 Existing Permit Expiration Date: 01/30/2013		
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Review Engineer: Joseph Voelker Review Engineer's Signature: _____ Date: _____			Comments / Recommendations: Issue 06486/T14 Permit Issue Date: Permit Expiration Date:		

I. Introduction

Jeld-Wen manufactures door skins from wood fibers mixed with a urea-formaldehyde resin bonding agent. The facility is currently investigating the use of low or no formaldehyde resins, however no application has been submitted to formally modify the permit to reflect these lower HAP/TAP emissions.

The purpose of this application is to renew the air permit.

The air permit has recently been revised and issued as of 02/19/2008 as revision T13. T13 was issued in response to permit application **5600169.06A** and required a thorough review and accounting of the facility's PM and TAP emitting sources, which represent all of the facility's sources.

Many of the stipulations were reviewed during application **5600169.06A** at a level of detail typical of a permit renewal. As such, the permit review for revision T13 will be included as an attachment to this permit review.

Also note that Jeld-Wen is working with the US EPA on global consent decree to address compliance with MACT Subpart DDDD, for which the compliance date has passed (October 1, 2008).

II. Chronology

Date	Description
December 29, 2003	<p>The effective date of SOC #2003-08 agreed to between the DAQ and JELD-WEN. The purpose of the SOC was to address the following violations and related issues:</p> <ul style="list-style-type: none"> • A Notice of Violation and Notice of Recommendation for Enforcement was issued to the COMPANY on July 21, 2003 for failure to complete the required modeling demonstrating compliance with the National Ambient Air Quality Standard for particulate matter less than 10 microns (PM10) required by Stipulation 2.2.A.5. of Air Permit No. 06486T06 by the extended deadline of June 30, 2003. • A Notice of Violation was issued to the COMPANY on July 10, 2003 for violation of Specific Condition 2.2.A.3. of Air Permit No. 06486T06 for emitting formaldehyde from “all other sources” above the permitted rate of 0.22 pounds per hour.
February 16, 2006	<p>Application received in the RCO from the ARO. This application was assigned no. 5600169.06A The application was made to: (Quoted from P&O dated March 14, 2006)</p> <ul style="list-style-type: none"> • Incorporate formaldehyde and PM10 modeling previously submitted 12/16/05 (and approved by Charles Buckler on 1/16/06) as required by the current SOC. The PM10 modeling revises previous modeling to reflect stack test data and the “as-built” parameters of the fiberline dryer bagfilters. However, they have modified the 12/05 approved modeling – see below. • Modify and debottleneck the presses increasing emissions across the entire facility. I asked Bonnie Basden on 2/13/06 what the de-bottleneck was and she indicated they were only changing the timing on the gears for the door skin presses to decrease the press time from 60 seconds to 50 seconds. She indicated this is a change to the original design of the system.
November 9, 2006	Renewal application was received in the RCO. This application was assigned no. 5600169.06D .
June 11, 2007	Applications 5600169.07A and 5600169.07D were assigned to Joe Voelker (JMV).
June 26, 2007	JMV had a phone conversation with Bonnie Basden regarding the status of the permit applications 5600169.07A and 5600169.07D . It was decided to process the renewal (5600169.07D) after the modification and SOC issues were resolved. JMV requested a revised modeling analysis including the missing sources from the previous modeling.
July 16, 2007	Permit T12 was issued and only addressed the issues in application no. 5600169.06C .
February 19, 2008	Permit T13 issued that addresses permit application no. 5600169.07A
March 7, 2008	Joe Voelker sent an email to Bonnie Basden requesting CAM plans.
April 28, 2008	CAM Plans received via email.
August 12, 2008	Joe Voelker sent Alex Gonyaw an email with CAM plan questions/suggested revisions.
September 16, 2008	Joe Voelker sent Jim English, General Manager, a request for a schedule of compliance for MACT Subpart DDDD.

Date	Description
September 18, 2008	<p>Joe Voelker sent an email to Bonnie Basden stating:</p> <p>Thank you but we need you to address your compliance status of Oct 1 2008. Attached is the language below that I was going to send to Mr. Arino yesterday but he called before I mailed and hence did not send. Your letter is what we are looking for with the exception of your Oct 1 compliance date status.</p> <p>Hello Mr. Arino,</p> <p>I spoke with Adam Kushner earlier today. He essentially restated my understanding of the situation, that is, a Special Order of Consent and hence a detailed schedule of compliance will not be in place before October 1, 2008.</p> <p>However, to issue the permit we still need one of the following:</p> <ol style="list-style-type: none"> 1. A written statement from the RO stating Jeld-Wen will be in compliance on Oct 1, 2008; or 2. A written statement from the RO stating Jeld-Wen will NOT be in compliance on Oct 1, 2008 and attach either: <ol style="list-style-type: none"> i. a detailed schedule of compliance; or ii. a narrative outlining the status of your collaboration with the EPA on achieving a Special Order of Consent. <p>I anticipate that option 2.ii. is reality but I need Jeld-Wen to formally state this. With this we can proceed with renewing your air permit.</p> <p>Feel free to call me with any questions.</p>
September 30, 2008	<p>An email from Bonnie Basden was received. It stated that Jeld-Wen was working with the EPA on a Global SOC for all Jeld-Wens Subpart DDDD affected facilities. It also claimed that Jeld-Wen would be in compliance with Subpart DDDD on October 1, 2008.</p> <p>This was discussed with Don van der Vaart. Given that the facility maintains that it will be in compliance with MACT on October 1, 2008, it was decided to include a MACT permit condition. Given that it is unclear HOW Jeld-Wen will be in compliance, the permit condition allows for all compliance options.</p>
October 1, 2008	Compliance date for MACT Subpart DDDD.
October 24, 2008	Adequate CAM plans received via email.
November 4, 2008	Draft permit sent to Jeld-Wen and the ARO (Brendan Davey) for preliminary review
November 17, 2008	Comments received from Jeld-Wen (Bonnie Basden). No major changes were made.
November 26, 2008	<p>Comments from the regional office (Brendan Davey) were received. He commented (paraphrased):</p> <ol style="list-style-type: none"> 1. The primer coating operation is subject to MACT QQQQ not DDDD (as indicated in the equipment list). Subpart QQQQ should appear in the air permit and permit review as well. 2. The wood boiler has not been tested for PT since 2002 - do you agree a stack test should be required? 3. MACT DDDD condition - initial compliance requirements - Make sure you take into account the DAQ compliance extension (letter dated 8/2/07) to Oct 1, 2008 and which required stack testing and report submittal by December 1, 2008. The permit condition should not have any different dates than the letter. <p>My response:</p> <p>Item 1. See addendum for review of MACT QQQQ and its inclusion in the permit.</p> <p>Item2. A test condition was added at the regions request.</p> <p>The DDDD was updated to reflect the extension dates.</p>

Date	Description
December 1, 2008	This is a compliance extension date for the performance testing required under MACT DDDD. The “compliance date” for the MACT and an extension to submit results of any performance testing were extended in a letter dated August 2, 2007. Given that these dates have passed, JELD-WEN has been deemed in non-compliance with 2D. 1111 (MACT Subpart DDDD). An NOV from the Ashville Regional Office is in progress at the time of this review. As a result, a Schedule of Compliance (SOC) was added to the permit. It requires Jeld-WEN to submit a permit application 30 days after the consent degree is achieved to modify the current SOC.
December 3, 2008	Revised DRAFT permit was sent to Brendan Davey of the ARO for review
December 15, 2008	Email from Brendan Davey of the ARO was received stating the revised draft was fine.
December 15, 2008	Revised DRAFT permit was sent to Jeld-Wen (Bonnie Basden) for review
December 17, 2008	Email from Bonnie Basden of Jeld-Wen was received stating “Thank you for allowing JELD-WEN to review the draft permit prior to submitting to public comment. JELD-WEN has completed the review of the draft permit and have no additional comments on the draft permit.”

III. Equipment List and Insignificant Activities List

The equipment list and the insignificant activities list was modified and reviewed for revision T13. No changes have been made to the facility since the issuance of T13. All MACT Subpart DDDD affected sources are indicated as such in the revised permit.

IV. Regulatory review

Regulatory review will be presented as necessary in similar fashion/layout as air permit T13.

No comments is to be interpreted to mean:

1. No changes to the language of the rule or the stipulation have occurred since the last permit issuance; or
2. No changes have occurred to the emission(s) source that would affect regulatory applicability as presented in the respective permit condition.

SECTION 2 - SPECIFIC LIMITATIONS AND CONDITIONS

2.1 Emission Source(s) and Control Devices(s) Specific Limitations and Conditions

A. Wood-fired boiler (ID No. B1) with multicyclone (ID No. MC1)

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	0.50 pounds per million Btu heat input	15A NCAC 2D .0504
Sulfur dioxide	2.3 pounds per million Btu	15A NCAC 2D .0516
Visible emissions	20 percent opacity	15A NCAC 2D .0521
PM ₁₀	See Section 2.2 A.5.	15A NCAC 2D. 0501(e)
Formaldehyde	See Section 2.2	15A NCAC 2D .1100

1. 15A NCAC 2D .0504: PARTICULATES FROM WOODBURNING INDIRECT HEAT EXCHANGERS

The 0.50 lb/mmBtu limit was verified to be correct.

B. natural gas-fired boiler (ID No. ES-B2) and natural gas-fired boiler (ID No. ES-B3)

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	0.44 pounds per million Btu heat input (ID No. ES-B2) 0.38 pounds per million Btu heat input (ID No. ES-B3)	15A NCAC 2D .0503
Sulfur dioxide	2.3 pounds per million Btu (ID Nos. ES-B2 and ES-B3)	15A NCAC 2D .0516
Visible emissions	20 percent opacity (ID Nos. ES-B2 and ES-B3)	15A NCAC 2D .0521
N/A	Recordkeeping only; monthly fuel records (ID No. ES-B2)	15A NCAC 2D .0524 40 CFR Part 60 Subpart Dc
PM ₁₀	See Section 2.2.(A)(5) (ID Nos. ES-B2 and ES-B3)	15A NCAC 2D. 0501(e)

1. **15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS**
The emission limits for source (ID No. B2) of 0.44 pounds per million Btu heat input and for source (ID No. B3) of 0.38 pounds per million Btu heat input were verified to be correct.
 2. **15A NCAC 2D .0524: NSPS 40 CFR PART 60 SUBPART Dc**
As these boilers fire solely natural gas the minimal requirements included in this stipulation are correct as presented.
- C. **Fiber Line Drying Operations Consisting of:**
Fiber Line 1 fiber drying operations (ID No. ES-FL1D) with cyclone (ID No. CD-D1) and three bagfilters (ID Nos. BHD1, BHD2 and BHD3)
Fiber Line 2 fiber drying operations (ID No. ES-FL2D) with cyclone (ID No. CD-D2) and three bagfilters (ID Nos. BHD1, BHD2 and BHD3)

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	Adequate ductwork and properly designed collectors	15A NCAC 2D .0512
Visible emissions	20 percent opacity	15A NCAC 2D .0521
Volatile organic compounds	See Section 2.2.(A)(1); State-enforceable only	15A NCAC 2D .0958
Odororous emissions	See Section 2.2.(A)(2); State-enforceable only	15A NCAC 2D .1806
Formaldehyde	See Section 2.2.(A)(3); State-enforceable only	15A NCAC 2D .1100
Xylene, Ammonia, Ethylene glycol Monoethyl ether, Acetaldehyde, Acrolein, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Phenol, Toluene	See Section 2.2.(A)(3); State-enforceable only	15A NCAC 2Q .0711
PM ₁₀	See Section 2.2 (A)(5)	15A NCAC 2Q .0501(e)

Based on the potential emissions estimates, these sources are also subject to CAM 40CFR 64 as promulgated in **15A NCAC 2D .0614 COMPLIANCE ASSURANCE MONITORING.**

The Permittee submitted a plan for the required monitoring, which will include daily visible emissions readings (Method 22-like, which basically determines if visible emissions exist or not), and weekly pressure drop readings across the bag filters. CAM also requires recordkeeping and reporting. These requirements will be incorporated into the revised permit as condition 2.1.C.3.

D. Fiber Line No. 1 collection/ recycling operations consisting of:

Forming and shave-off operations (ID No. ES-F1) with bagfilter (ID No. BHF1)
 Fiber Line fiber collection/ recycling operations (ID No. ES-1) with cyclone (ID No. CD-FR1) and cyclone (ID No. PC1) vented to bagfilter (ID No. BH1)

Fiber Line No. 2 collection/ recycling operations consisting of:

Forming and shave-off operations (ID No. ES-F2) controlled by bagfilter (ID No. BHF2)

Fiber Line fiber collection/recycling operations (ID No. ES-2) with cyclone (ID No. CD-FR2) and cyclone (ID No. CD-PC2) vented to bagfilter (ID No. BH2)

The following table provides a summary of limits and standards for the emission sources(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	Adequate ductwork and properly designed collectors	15A NCAC 2D .0512
Visible emissions	20 percent opacity	15A NCAC 2D .0521
PM ₁₀	See Section 2.2 (A)(5)	15A NCAC 2Q .0501(e)

**E. Fiber Line Presses consisting of: Fiber Line 1 Hot Press (ID No. ES-P1)
Fiber Line 2 Hot Press (ID No. ES-P2)**

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	Adequate ductwork and properly designed collectors	15A NCAC 2D .0512
Visible emissions	20 percent opacity	15A NCAC 2D .0521
Volatile organic compounds	See Section 2.2.(A)(1)	15A NCAC 2D .0958
Odororous emissions	See Section 2.2.(A)(2); State-enforceable only	15A NCAC 2D .1806
Formaldehyde	See Section 2.2.(A)(3); State-enforceable only	15A NCAC 2D .1100
Xylene, Ammonia, Ethylene glycol Monoethyl ether, Acetaldehyde, Acrolein, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Phenol, Toluene	See Section 2.2.(A)(4); State-enforceable only	15A NCAC 2Q .0711
PM ₁₀	See Section 2.2.(A)(5)	15A NCAC 2D. 0501(e)

F. primer coating operation consisting of dry filter type spray booth (ID No. ES-PB1.1) and steam heated curing oven (ID No. ES-PB1.2)

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	Adequate ductwork and properly designed collectors	15A NCAC 2D .0512
Visible emissions	20 percent opacity	15A NCAC 2D .0521
Volatile organic compounds	See Section 2.2.(A)(1)	15A NCAC 2D .0958
Odororous emissions	See Section 2.2.(A)(2); State-enforceable only	15A NCAC 2D .1806
Formaldehyde	See Section 2.2.(A)(3); State-enforceable only	15A NCAC 2D .1100
Xylene, Ammonia, Ethylene glycol monoethyl Ether, Acetaldehyde, Acrolein, Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Phenol, Toluene	See Section 2.2.(A)(4); State-enforceable only	15A NCAC 2Q .0711

Regulated Pollutant	Limits/Standards	Applicable Regulation
PM ₁₀	See Section 2.2.(A)(5)	15A NCAC 2D.0501(e)

Based on the potential emissions estimates, these sources were initially thought to be subject to CAM 40CFR 64 as promulgated in **15A NCAC 2D .0614 COMPLIANCE ASSURANCE MONITORING**. However, given that paint booths are not considered to be control devices for regulatory purposes, CAM does not apply.

**G. stacked skins sizer trim process (ID No. ES-1W)
two raw material silos (ID Nos. ES-S3 and -ES-S4) with bagfilter (ID No. BH1W)**

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	Adequate ductwork and properly designed collectors	15A NCAC 2D .0512
Visible emissions	20 percent opacity	15A NCAC 2D .0521
PM ₁₀	See Multiple Emissions Section 2.2.(A)(5)	15A NCAC 2D.0501(e)

Based on the potential emissions estimates, the stacked skins sizer trim process (**ID No. ES-1W**) is also subject to CAM 40CFR 64 as promulgated in **15A NCAC 2D .0614 COMPLIANCE ASSURANCE MONITORING**.

The Permittee submitted a plan for the required monitoring, which will include daily visible emissions readings (Method 22-like, which basically determines if visible emissions exist or not), and weekly pressure drop readings across the bag filter. CAM also requires recordkeeping and reporting. These requirements will be incorporated into the revised permit as condition 2.1.G.3.

**H. Storage tank containing urea-formaldehyde resin (7,400 gallons capacity) (ID No. ST-R1)
Storage tank containing urea-formaldehyde resin (7,400 gallons capacity) (ID No. ST-R2)
Doorskin inventory (ID No. ES-DS)**

The following table provides a summary of limits and standards for the emission source(s) described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Volatile organic compounds	See Section 2.2.(A)(1)	15A NCAC 2D .0958
Odorous emissions	See Section 2.2.(A)(2); State-enforceable only	15A NCAC 2D .1806
Formaldehyde	See Section 2.2.(A)(3); State-enforceable only	15A NCAC 2D .1100

Section 2.2- Multiple Emission Source(s) Specific Limitations and Conditions

A. Facility-wide affected sources

The following table provides a summary of limits and standards for the emission source(s) describe above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Odors	Odorous emissions must be controlled; State enforceable only	15A NCAC 2D .1806
Volatile organic compounds	Work practice standards	15A NCAC 2D .0958
Toxic air pollutants	Toxic air pollutant emissions shall not exceed the levels listed in 2Q .0711 unless ambient standards are not exceeded; State-enforceable only	15A NCAC 2Q .0711

	Toxic air pollutant emissions shall not exceed their modeled acceptable ambient levels; State -enforceable only	15A NCAC 2D .1100
PM ₁₀	15A NCAC 2D. 0501(e) : COMPLIANCE WITH NATIONAL AMBIENT AIR QUALITY STANDARDS	15A NCAC 2D. 0501(e)
Hazardous air pollutants (HAPs)	National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products	15A NCAC 2D .1111 40 CFR Part 63, Subpart DDDD

STATE-ENFORCEABLE ONLY**1. 15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS****STATE-ENFORCEABLE ONLY****2. 15A NCAC 2D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS****STATE-ENFORCEABLE ONLY**

3. TOXIC AIR POLLUTANT EMISSIONS LIMITATION AND REQUIREMENT - Pursuant to 15A NCAC 2D .1100 and in accordance with the approved application for an air toxic compliance demonstration, the following permit limits shall not be exceeded:

Emission Source ID No.	Emission Source description	Emission release point, ID No(s).	Emission release point description	Formaldehyde emission limit, pounds per hour
B1	Wood-fired boiler	ERP-MC1	Multi-cyclone stack	0.192
ES-FL1D	Fiber line 1 fiber drying operations	ER-BHD1, BHD2 and BHD3	three bagfilter stacks	0.118, per release point
ES-FL2D	Fiber line 2 fiber drying operations			
ES-F1	Fiber line 1 forming and shave-off operations	ERP-BHF1	bagfilter stack	4.89E-02
ES-1	Fiber line 1 collection/recycling operations	ERP-BH1	bagfilter stack	7.54E-03
ES-F2	Fiber line 2 forming and shave-off operations	ERP-BHF2	bagfilter stack	4.89E-02
ES-2	Fiber line 2 collection/recycling operations	ERP-BH2	bagfilter stack	7.54E-03
ES-P1	Fiber line 1 hot press	PV-1	press vent 1	3.89
ES-P2	Fiber line 2 hot press	PV-2	press vent 2	3.89
ES-1W	Stacked skins sizer trim process	ERP-BH1W	bagfilter stack	4.36E-02
DS	Doorskin inventory	ERP-DS	doorskin fugitive	0.146
R1	Resin tank 1	ERP-ST1	tank 1 vents	2.40E-04
R2	Resin tank 2	ERP-ST2	tank 2 vents	2.40E-04

This stipulation was substantially reworked in Revision T13. No changes have been made since then.

STATE-ENFORCEABLE ONLY**4. 15A NCAC 2Q .0711: "PERMIT REQUIREMENTS FOR TOXIC AIR POLLUTANTS"**

In accordance with the approved application, the Permittee shall maintain records of operational information demonstrating that the TAP emissions do not exceed the TPERs as listed below:

TPERs Limitations				
Pollutant (CAS Number)	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)
xylene (1330-20-7)		57		
ammonia (7664-41-7)				0.68
ethylene glycol monoethyl ether (110-80-5)		2.5	0.48	
Acetaldehyde (75-07-0)				6.8
Acrolein (107-02-8)				0.02

TPERs Limitations				
Pollutant (CAS Number)	Carcinogens (lb/yr)	Chronic Toxicants (lb/day)	Acute Systemic Toxicants (lb/hr)	Acute Irritants (lb/hr)
Methyl ethyl ketone (78-93-3)				
Methyl isobutyl ketone (108-10-1)		52		7.6
Phenol (108-95-2)			0.24	
Toluene (108-88-3)		98		14.4

The list of TAPs emitted below the TPERs was revised for permit revision T13. No changes have occurred since then.

5. COMPLIANCE WITH NATIONAL AMBIENT AIR QUALITY STANDARDS

Pursuant to 15A NCAC 2D. 0501(e), the emissions of PM₁₀ shall not exceed the emission rates as indicated in the table below:

Emission source ID No.	Source description	Emission release point, ID No(s).	Emission release point description	PM ₁₀ emission limit, pounds per hour
B1	Wood-fired boiler	ERP-MC1	multicyclone stack	8.59
B2	Natural gas-fired boiler	B2	boiler stack	0.249
ES-FL1D ES-FL2D	Fiber line 1 fiber drying operations Fiber line 2 fiber drying operations	ER-BHD1	bagfilter stack	1.03
		ER-BHD2	bagfilter stack	1.24
		ER-BHD3	bagfilter stack	1.29
ES-F1	Fiber line 1 forming and shave-off operations	ERP-BHF1	bagfilter stack	6.24E-03
ES-1	Fiber line 1 collection/recycling operations	ERP-BH1	bagfilter stack	4.02E-04
ES-F2	Fiber line 2 forming and shave-off operations	ERP-BHF2	bagfilter stack	6.24E-03
ES-2	Fiber line 2 collection/recycling operations	ERP-BH2	bagfilter stack	4.02E-04
ES-P1	Fiber line 1 hot press	PV-1	press vent 1	2.38
ES-P2	Fiber line 2 hot press	PV-2	press vent 2	2.38
ES-1W	Stacked skins sizer trim process	ERP-BH1W	bagfilter stack	0.402
ES-PB1.1	Paint booth	PB1	stack	1.20
I-RMH	Truck dump	RMH	fugitive	0.240

This stipulation was substantially reworked in revision T13. No changes have occurred since then.

6. 15A NCAC 2D .1111, 40 CFR Part 63, Subpart DDDD: National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products

The facility claims it will be in compliance with the MACT as of October 1, 2008. The facility has not submitted an application detailing how it intends to comply with Subpart DDDD however (see Chronology). A MACT condition which allows any of the options presented in 40 CFR 63 will be placed into the permit with enforceable conditions.

SECTION 3 - GENERAL CONDITIONS

Since the issuance of T13 the general conditions have been revised to include:

1. Condition MM, which is for 15A NCAC 2D .0540 "Particulates from Fugitive Dust Emission Sources", a state enforceable only condition; and
2. Condition NN, which addresses application guidance for modifications made pursuant to 15A NCAC 2Q .0501(c)(2), 15A NCAC 2Q .0501(d)(2), and 502(b)(10), in accordance with 15A NCAC 2Q .0523(a)(1)(C)

All of the general conditions were updated to the current version (2.22.1).

V. Facility-wide regulatory considerations

NSPS

Boiler ES-B2 is a NSPS Subpart Dc affected source with recordkeeping requirements.

PSD

The facility is a PSD minor source.

NESHAPS

Subpart DDDD National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products applies to the facility. The compliance date is October 1, 2008. See the discussion in Section IV. Subpart QQQQ applies as well. See attachment B.

CAM

During a review of the permit application Table 1B, it appeared that CAM may apply to the Primer coating operations, various bagfilter and cyclones and the fiber dryers. A request was sent to JELD-WEN to review the emission estimates for CAM applicability. Upon review Jeld-Wen, submitted CAM plans on April 28, 2008 for the following sources:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-FL1D	Fiber line 1 fiber drying operations	CD-D1 BHD1 BHD2 BHD3	cyclone (132 inches in diameter) venting to three parallel bagfilters (6,451 square feet of filter area)
ES-FL2D	Fiber line 2 fiber drying operations	CD-D2 BHD1 BHD2 BHD3	cyclone (132 inches in diameter) venting to three parallel bagfilters (6,451 square feet of filter area)
ES-PB1.1	dry filter type spray booth	N/A	N/A
ES-1W	Stacked skins sizer trim process	CD-BH1W	bagfilter (4,651 square feet of filter area)

See the individual discussions above in Section IV.

Attainment

McDowell County is in attainment for all pollutants.

VI. Changes to Existing Air Permit No. 06486T13

Condition No.	Changes
Cover Letter	<ul style="list-style-type: none"> Updated permit revision numbers, dates, etc. and Updated language to current permit shell (2.22.1) standards
Permit Cover page	Updated dates, revision numbers, etc.
Permitted equipment list	Added the descriptor of MACT Subpart DDDD and Subpart QQQQ to all applicable sources
ALL	Removed reference to PART I as TV permits will no longer a PART II.
ALL 2D .0521 conditions	<p style="text-align: center;">For all 2D(c)(3), (4) and (8)</p> <p>Conditions .0521 conditions the following condition</p> <p>ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .0501(c)(8) is below the limit given in Section (as applicable) above.</p> <p style="text-align: center;">was replaced with :</p> <p>ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2601 (Method 9) for 12 minutes is below the limit given in Section(as applicable) above</p>

Condition No.	Changes
All Testing [15A NCAC 2D .0501 (c)(3), (4) and (8)] Conditions	For all Testing [15A NCAC 2D .0501 (c)(3), (4) and (8)] Conditions the regulatory citation was revised to 15A NCAC 2D .2601 to reflect recent rule changes
2.1A.1.c (new)	At the request of the regional office a testing requirement for 15A NCAC 2D .0504 within 18 months of permit issuance was added to the permit.
2.1.C.3	Added a 2D .0614 (CAM) condition. Permittee has chosen two indicator methods. Semi-annual reporting required
2.1.F.3	Added the MACT QQQQ condition.
2.1.G.3	Added a 2D .0614 (CAM) condition. Permittee has chosen two indicator methods. Semi-annual reporting required
2.2.A.6	Revised the MACT DDDD condition to include enforceable conditions.
2.3	Added a Schedule of Compliance for MACT Subpart DDDD
General Conditions	Updated to version v.2.22.1, which includes the new conditions: <ul style="list-style-type: none"> •MM, which is for 15A NCAC 2D .0540 "Particulates from Fugitive Dust Emission Sources", a state enforceable only condition and • NN, which addresses application guidance for modifications made pursuant to 15A NCAC 2Q .0501(c)(2), 15A NCAC 2Q .0501(d)(2), and 502(b)(10), in accordance with 15A NCAC 2Q .0523(a)(1)(C)

VII. Compliance History

The following five year compliance history was obtained from Brendan Davey's (assigned inspector) compliance inspection report of 04/08/2008 and other correspondence.

a. Five year compliance history as obtained from the ARO electronic files:

A Notice of Violation was issued August 14, 2007 for failure to timely submit a semi-annual report.

A Notice of Violation was issued February 1, 2007 for failure to conduct weekly spray booth filter inspections.

A Notice of Violation was issued October 4, 2005 for failure to conduct required weekly visual monitoring (primer coating operation) stipulated in Specific Condition 2.1.F.1.b. of Air Permit No. 06486T09 for three weeks in April/May 2005. Also, a NOV was issued of Specific Conditions 2.1.C.1.c., 2.1.D.1.b., and 2.1.G.1.b. for the Fiber Line fiber drying operations (ID No. FL1D and FL2D), forming and shave-off operations (ID No. ES-F1 and ES-F2), fiber Line fiber collection/ recycling operations (ID No. ES-1 and ES-2), and the stacked skins sizer process (ES-1W) for failure to document the required monthly inspections for January and February 2005. This violation was reported in their semi-annual summary report.

A Notice of violation dated August 30, 2004 was issued for failure to conduct the required daily visual monitoring [wood-fired boiler (ID No. B1)] stipulated in Specific Condition 2.1.A.3.c. of Air Permit No. 06486T09 for five days in January 2004. This violation was reported in their semi-annual summary report.

A Notice of Violation dated February 13, 2004 was issued for failure to conduct the required daily visual monitoring [wood-fired boiler (ID No. B1)] stipulated in Specific Condition 2.1.A.3.c. of Air Permit No. 06486T08. This violation was reported by the Company in their annual compliance certification.

A Notice of Violation and Notice of Recommendation for Enforcement was issued to the COMPANY on July 21, 2003 for failure to complete the required modeling demonstrating compliance with the National Ambient Air Quality Standard for particulate matter less than 10 microns (PM10) required by Stipulation 2.2.A.5. of Air Permit No. 06486T06 by the extended deadline of June 30, 2003.

A Notice of Violation was issued to the COMPANY on July 10, 2003 for violation of Specific Condition 2.2.A.3. of Air Permit No. 06486T06 for emitting formaldehyde from "all other sources" above the permitted rate of 0.22 pounds per hour. ***The above two violations are addressed in a current Special Order by Consent (see item c. below)***

Other NOVs:

On July 9, 2002 a NOV was issued for permit condition B.6. for improper operation of the bagfilter (ID No. BH1W; 4,651 square feet of filter area) installed on the stacked skins sizer trim process.

On June 21, 2002 a NOV was issued for permit condition B.6. for improper operation of the cyclone (ID No. D2; 132 inches in diameter) installed on Fiber Line 2 drying operations (ID No. FL2D).

On February 21, 2001 a NOV was issued for failure to comply with 2Q .0700 – “Toxic Air Pollutant Procedures.”

On March 29, 2000 a NOV was issued for permit condition B.6. for improper operation of the Fiber Line 1 dryer tube which had a leak which was emitting wood fiber.

On October 18, 1999 a NOV for continuing violation of air permit No. 6486R4 and 15A NCAC 2Q .0700 for failure to comply with formaldehyde modeling requirements.

On August 30, 1999 a NOV was issued for permit condition B.6. for improper operation of the plant with loose fiber on the maintenance platform below the Line 2 dryer cyclone.

On June 4, 1999 a NOV was issued for permit condition B.6. for operating Fiber Line 2 Dryer without the proper operation of the air cleaning device.

On April 20, 1999 a NOV was issued for permit condition B.6. for operation of a ruptured silo.

On January 6, 1999 a NOV was issued for permit condition B.6. for improper operation of a rotary valve on the Fiber Line No. 1 cyclone (ID No. D1) had a leaking seal which was causing fugitive wood dust emissions.

On December 14, 1998 a NOV was issued for permit condition B.6. for improper operation of bagfilters on Fiber Line 1 (ID No. BHF1) and Fiber Line 2 (ID No. BHF2) which were emitting visible dust.

- c. **Special Order by Consent:** The Division and this Company entered into a Special Order by Consent SOC # 2003-08 effective December 29, 2003. The purpose of the SOC is to address formaldehyde modeling and PM10 modeling. The SOC was fully resolved with T13 permit issuance in February 2008.
- d. The annual compliance certification was timely received January 30, 2008 and mentioned one deviation: failure to timely submit a report. A NOV was previously issued for this deviation.

VIII. Public Notice

See chronology in Section II.

IX. Comments and Conclusions

TBD

X. Recommendations

TBD

ATTACHMENT A
Review for Permit T13

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date: February 19, 2008

Region: Asheville Regional Office
County: McDowell
NC Facility ID: 5600169
Inspector's Name: Brendan Davey
Date of Last Inspection: 01/25/2007
Compliance Code: 5/Meeting Compliance Schedule

Facility Data			Permit Applicability (this application only)		
<p>Applicant (Facility's Name): JELD-WEN, Inc.</p> <p>Facility Address: JELD-WEN, Inc. 100 Henry McCall Road Marion, NC 28752</p> <p>SIC: 2493 / Reconstituted Wood Products NAICS: 321219 / Reconstituted Wood Product Manufacturing</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>			<p>SIP: 2D .1100, .0501 NSPS: NA NESHAP: DDDD, DDDDD PSD: NA PSD Avoidance: NA NC Toxics: yes 112(r): NA Other:</p>		
Contact Data			Application Data		
Facility Contact	Authorized Contact	Technical Contact	<p>Application Number: 5600169.06A Date Received: 02/16/2006 Application Type: Modification Application Schedule: TV-Significant Existing Permit Data Existing Permit Number: 06486/T12 Existing Permit Issue Date: 07/07/2005 Existing Permit Expiration Date: 08/31/2007</p>		
<p>Jim English General Manager (828) 724-9511 100 Henry McCall Road Marion NC, 28752</p>	<p>Jim English General Manager (828) 724-9511 100 Henry McCall Road Marion NC, 28752</p>	<p>Julie White Environmental Permitting Technician (541) 883-3373 PO Box 1540 Klamath Falls OR, 97601</p>			
<p>Review Engineer: Joseph Voelker</p> <p>Review Engineer's Signature: _____ Date: February 19, 2008</p>			<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue 06486/T13 Permit Issue Date: February 19, 2008 Permit Expiration Date: January 31, 2013</p>		

I. Introduction

This review is for application 5600169.06A to satisfy SOC 2003-008 and for application 5600169.06B which is to modify Fiber Line 1 Hot Press and Fiber Line 2 Hot Press for faster operation so that production may be increased.

Jeld-Wen has operated under a Special Order By Consent following failure to demonstrate PM₁₀ compliance and having been found to emit formaldehyde in excess of a stipulation in permits 06486T06 and 06486T07.

This review will address the following issues/items:

1. Modify the air permit to decrease the hot presses cycle time, thus allowing an increase in throughput.
2. Address the PM₁₀ and formaldehyde modeling required by the SOC 2003-008 and incorporate the results into the air permit as necessary. Note that the approved modeling reflects the increase in throughput requested in item 1.
3. Modify three exhaust points that were necessary to demonstrate compliance with the PM₁₀ NAAQS and to satisfy the SOC 2003-008.
4. Add three insignificant emission sources to the air permit. These were triggered into permitting per 2Q .0702 because of their formaldehyde emissions.
5. Revise the paint booth (PB1) filter capture efficiency from 95% to 98.5%.

6. Remove the MACT Subpart DDDDD (Boiler MACT) requirements as the rule has been vacated.

II. Chronology

Date	Description
December 29, 2003	<p>The effective date of SOC #2003-08 agreed to between the DAQ and JELD-WEN. The purpose of the SOC was to address the following violations and related issues:</p> <ul style="list-style-type: none"> • A Notice of Violation and Notice of Recommendation for Enforcement was issued to the COMPANY on July 21, 2003 for failure to complete the required modeling demonstrating compliance with the National Ambient Air Quality Standard for particulate matter less than 10 microns (PM10) required by Stipulation 2.2.A.5. of Air Permit No. 06486T06 by the extended deadline of June 30, 2003. • A Notice of Violation was issued to the COMPANY on July 10, 2003 for violation of Specific Condition 2.2.A.3. of Air Permit No. 06486T06 for emitting formaldehyde from “all other sources” above the permitted rate of 0.22 pounds per hour.
December 16, 2005	Modeling received in the RCO required by SOC # 2003-08.
January 19, 2006	Chuck Buckler of the AQAB issued memo stating “This modeling demonstrates, on a source by source basis, compliance with formaldehyde and PM10.”
February 16, 2006	<p>Application received in the RCO from the ARO. This application was assigned no. 5600169.06A The application was made to:</p> <p><i>(Quoted from P&O dated March 14, 2006)</i></p> <ul style="list-style-type: none"> • Incorporate formaldehyde and PM10 modeling previously submitted 12/16/05 (and approved by Charles Buckler on 1/16/06) as required by the current SOC. The PM10 modeling revises previous modeling to reflect stack test data and the “as-built” parameters of the fiberline dryer bagfilters. However, they have modified the 12/05 approved modeling – see below. • Modify and debottleneck the presses increasing emissions across the entire facility. I asked Bonnie Basden on 2/13/06 what the de-bottleneck was and she indicated they were only changing the timing on the gears for the door skin presses to decrease the press time from 60 seconds to 50 seconds. She indicated this is a change to the original design of the system.
March 14, 2006	Letter received from Jeld Wen including the \$834 processing fee and a response letter regarding authorized contacts, stating that General Managers are authorized to be considered authorized contacts.
April 3, 2006	Letter from Jamie Sellman of AQAB was sent to JELD-WEN stating “I have reviewed the modeling analysis that was submitted February 16 for particulate matter and formaldehyde from JELD-WEN, Inc. This was to fulfill the requirement of Conditions II.B.4 and II.C.1, under Special Order by Consent (SOC) No. 2003-008. Per our conversation on March 14 and subsequent conversations, the modeling analysis did <u>not</u> indicate compliance with the National Ambient Air Quality Standard (NAAQS) for PM10 after the appropriate/required background values were added to the maximum modeled impacts...”
May 15, 2006	A letter was received in the RCO referencing a conference call between JELD-WEN and the DAQ (Brendan Davey and Paul Muller) in which it was decided to separate the application to satisfy the SOC from the request for an increase of production. A separate modification application was to be submitted in the near future.
August 11, 2006	An air permit application was received in the RCO requesting an increase in production and the modification of three stacks. The application included a modeling analysis. This application was assigned no. 5600169.06B
August 16, 2006	An acknowledgment letter was sent to Jim English General Manager requesting authorized signature on application 5600169.06B .
September 6, 2006	A memo was issued from Jerry Freeman of the AQAB stating “ I reviewed the dispersion modeling analysis, received in this office on August 16, 2006....the modeling did demonstrate compliance on a source by source basis with the NAAQS and AALs, as applicable.”

Date	Description
September 15, 2006	<p>An application was received in the RCO to incorporate enforceable conditions pertaining to the emissions and health related impact of manganese from a wood-fired boiler. The application is being processed as a significant modification because of the addition of an emission limit for manganese, and monitoring, recordkeeping, and reporting requirements. This application was assigned no. 5600169.06C.</p> <p><i>As quoted from review from T12:</i></p> <p>The applicant has requested to comply with the total selected metals (TSM) standard in lieu of the particulate standard contained in the boiler MACT pursuant to 40 CFR 63.7507(b) for their wood-fired boiler (ID No. ES-B1; 43.6 million Btu per hour heat input). The National Emission Standard for Hazardous Air Pollutants (NESHAP), Subpart DDDDD, allows a facility to demonstrate compliance with the TSM emission limit (arsenic, beryllium, cadmium, chromium, lead, nickel, selenium, and manganese) by excluding manganese emissions provided that the facility demonstrates that the impact due to manganese emissions will not adversely affect public health through risk assessment in accordance with Appendix A. The provision requires that the demonstration be made by September 13, 2006.</p> <p>The Division of Air Quality (DAQ) is required to review the Health Based Compliance Alternative (HBCA) in accordance with the provisions of Appendix A of NESHAP Subpart DDDDD and incorporate enforceable conditions into the facility's operating permit to ensure that conditions under which the HBCA demonstration was conducted remain valid.</p>
October 25, 2006	A permit application P&O review from Brendan Davey was sent to Bob Wooten. Among other things it was noted that two insignificant sources (two storage tanks and inventory) were not included in the modeling analysis for formaldehyde (for applications 5600169.06 A and B).
November 8, 2006	Application no. 5600169.06B was consolidated with application no. 5600169.06A . Note that this represents a consolidation of applications that were recommended to be separated on May 15, 2006.
November 9, 2006	Renewal application was received in the RCO. This application was assigned no. 5600169.06D .
January 25, 2007	A compliance inspection was conducted by Brendan Davey at the JELD-WEN facility. Mr. Davey Noted in his inspection report that (among other less related issues) the exhaust flow rate and temperatures on the press vent stacks differed from those used in the modeling demonstration (August 16, 2006). The values noted were for sources P1 and P2 temperature equal to 65°F (291.5K) and for exit velocity 17.0 m/s.
February 9, 2007	<p>A letter from the DAQ was sent to JELD-WEN requesting:</p> <ul style="list-style-type: none"> • Remodel for formaldehyde based on revised press vent stack parameters; • Make a modification to the press vent stacks to ensure parameters meet the ones used in the modeling; or • Establish new acceptable parameters and modeling that demonstrates compliance with the requirements.
April 12, 2007	A letter from JELD-WEN was received in the RCO addressing the concerns raised in the letter from the DAQ dated February 9, 2007. In the letter JELD-WEN presents a discussion on modeling analysis in response to the letter sent February 9, 2007. The letter attempts to explain why in some cases exceedances of the formaldehyde AALs do not reflect conditions that would be possible in reality. That is, the stack temperatures to some degree are a function of the ambient temperatures and the assumption of a very conservative low stack temperature (like the one found during the compliance inspection in January) applied to all meteorological scenarios (such as in the warmer summer months).
May 10, 2007	<p>Jim Roller sent Bob Wooten (permit engineer at the time) his opinions on the modeling discussions presented in the letter received from JELD-WEN on April 12, 2007. In the email Mr. Roller states:</p> <p>"...gas temps and velocities will vary – need to establish a consistent method to determine each and allow for some tolerance in measured values. Just not feasible to model all possibilities and not practical to assume most conservative values."</p> <p>It should be noted that this modeling analysis was conducted and presented in the letter received on April 12, 2007 with review by the AQAB.</p>
June 11, 2007	Applications 5600169.07A and 5600169.07D were assigned to Joe Voelker (JMV).

Date	Description
June 25, 2007	JMV discussed Jim Roller's memo of May 10, 2007 with Jim Roller. Upon review and discussion Jim Roller restated that it is quite acceptable to model an emission source based on its average parameters, including temperature and flow rate (stack velocity).
June 26, 2007	JMV had a phone conversation with Bonnie Basden regarding the status of the permit applications 5600169.07A and 5600169.07D . It was decided to process the renewal (5600169.07D) after the modification and SOC issues were resolved. JMV requested a revised modeling analysis including the missing sources from the previous modeling.
July 16, 2007	Permit T12 was issued and only addressed the issues in application no. 5600169.06C .
September 12, 2007	A revised modeling report was received in the RRO.
September 28, 2007	Mark Yoder of the AQAB issued a memo stating "This modeling is an update of an analysis submitted in July 2006, and includes fugitive sources as requested by NC DAQ. The modeling analysis adequately demonstrates compliance on a source-by-source basis with the NAAQS for PM ₁₀ , as well as the acceptable ambient level (AAL) for the North Carolina Toxic Air Pollutant (TAP) formaldehyde.
October 11, 2007	JMV had a phone conversation with Bonnie Basden of JELD-WEN. Ms. Basden confirmed that all the application materials were still representative of the modification (that is, nothing has changed). She forwarded me the email sent Mike Brandon regarding removal of the Boiler MACT language (which was the basis of permit application 5600169.06C). We also discussed the single point measurements for the process vents. She said they have found that the single point measurements yield lower velocity readings that a full traverse would indicate. Therefore the single point measurements with respect to the toxics compliance demonstration are adequate. Apparent discrepancies and the rather ambiguous nature of the permit application was also discussed. JMV said he would send an email to request additional information.
October 12, 2007	JMV sent an email to Bonnie Basden stating: <ol style="list-style-type: none"> 1. Please review your emissions calculations, correct as necessary and supply revised application forms and supporting documents as necessary. 2. Please submit a revised cover letter that details the nature of the modification. Be sure to include the changes in production rate, what physical or operational changes that are occurring, etc.
October 31, 2007	Email was received from Bonnie Basden containing the information requested on October 12, 2007.
November 29, 2007	JMV had a phone conversation with Bonnie Basden in which the formaldehyde emission rates were discussed. It was discovered that the door skin inventory hourly formaldehyde emission rate that was modeled was underestimated based on other calculations used to generate the emissions inventory. Ms. Basden agreed to allow the AQAB to rerun the analysis with an increase to door skin inventory emission rate. The emission rate was doubled. Since it is a small contributor to the facility-wide emissions of formaldehyde, this relatively dramatic increase in emissions was not expected to change the results of the approved analysis significantly.
December 3, 2007	Mark Yoder of the AQAB issued a memo stating "I have run AERMOD for the JELD-WEN facility with the change to the Door skin Inventory (DI) source, as you requested. I changed the formaldehyde emission rate to 1.84 e ⁻² g/s, with no other changes to the modeling input file. The modeling results did not change, and the maximum 1-hour modeled formaldehyde concentration is still 76% of the AAL.
December 17, 2007	Comments on the permit draft received from Bonnie Basden. No significant changes were made.
December 20, 2007	Comments on the permit draft received from Asheville Regional Office via Brendan Davey. No significant changes were made.
January 4, 2008	Public Notice for permit modification was published in The McDowell News on Friday January 4, 2008.
February 4, 2008	Public comment period ended. No public comments were received.

Date	Description
February 18, 2008	Concurrent EPA comment period ended. No comments from the EPA were received.

III. Application History Summary

The following discussion was the work of Bob Wooten, the previous permit engineer. It was included for historical completeness.

Application 5600169.06A was originally submitted with the intention of satisfying SOC modeling demonstrations and expanding operations with modification to the presses to decrease the cycle time. With the increased production it was not possible to model compliance with the PM10 ambient air standard. Then Jeld-Wen decided to ask for the application to be amended to just deal with the production rates allowed by the existing permit so they could satisfy the SOC. They were able to show compliance for formaldehyde and PM10 at the old production rate. They then submitted a new application (5600169.06B) with additional modeling that was able to demonstrate compliance at increased production by turning three stacks from horizontal to vertical discharge. They also proposed to remove a rain cap from the stack of their gas-fired boiler (B2). There was some confusion about this rain cap due to poor documentation in the application. There were also delays because of lack of signatures by a responsible official. They also were asked to submit a new set of application forms for the 06A application describing the situation as modeled for the SOC rather than with the increased production.

There were three insignificant sources of formaldehyde (ST-R1, ST-R2, and door skin inventory---together they are about 1% of the total) that were not included in the modeling (both applications) but should have been. Because modeled ambient values are well under what is allowed, this is not believed to be a problem. According to Peter Brewer of Jeld-Wen, much or all of this emission may be extracted via process vents and go through stacks that were modeled (*ie.* increasing the emissions through the modeled stacks slightly). Further, I decided that the new permit should require new formaldehyde modeling to determine the percent of ambient concentration that may actually occur or have occurred.

IV. Application History Summary-Revised

As stated in Bob Wooten's discussion, the original application to simultaneously satisfy the SOC regarding the compliance of PM10 with the NAAQS and formaldehyde with the NC Toxics AAL and an increase in production was decided to be processed separately. However, this approach was abandoned given the complicating factors that had arisen along the way. In the end, the final modeling discussed in this application will reflect that the facility as requested to be modified and will demonstrate compliance with the PM10 NAAQS and the formaldehyde AAL guideline.

V. Modification description

JELD-WEN is proposing to increase the hourly and annual production at the facility and use new emission factors for the truck dump and a new control efficiency for the prime line. The increase in production will not require the installation of equipment. However the facility will need to modify three stacks in order to show compliance with the NAAQS for PM10. The changes to the stacks will only require changing them from horizontal to vertical unobstructed. The stacks are on the following sources:

Emission Source ID	Emission Source Description
BF1	Line 1 Former Waste Baghouse Vent
BF2	Line 2 Former Waste Baghouse Vent
SB	Skin Sizer Baghouse Vent

Based on a revised application cover letter requested on October 11, 2007,

“JELD-WEN proposes to increase the hourly annual production at the facility located in Marion, NC by shortening the press cycle time. The hourly production rate on each line will increase from 13,600 ft²- 1/8”per hour to 17,160 ft² – 1/8” per hour and the annual production on each line will increase from 101,265,600 ft² – 1/8” per year to 127,773,360 ft² – 1/8” year. A physical change is not required for the increase in production. The increase in

production is achieved by shortening the press cycle time on the press line from 60 seconds to 50 seconds. The press cycle time is programmed into controls on the fiber line.

The permit application submitted for the production increase included a change to the paint booth (PB1) filter capture efficiency from 95% to 98.5%. The manufacturer provided a capture efficiency of 99%, although in the past it was JELD-WEN's practice to use a conservative efficiency of 95%. JELD-WEN has decided to use the manufacturer's specifications and changing the filter efficiency to 98.5% provided a more realistic estimate of the emissions from the paint booth filter."

Also, as a part of the application (and dispersion modeling) the company is changing the emission factor used for truck dump. These "paperwork" changes effectively lower estimated particulate emissions for compliant dispersion modeling.

This modification results in a potential increase in throughput of 26%.

Since the facility has to model formaldehyde emissions from all applicable sources, three previously considered insignificant activities will be added to the permit . They are:

Current Emission Source ID	Emission Source Description
I-DS	door skin inventory fugitive emissions
I-ST-R1	7,400 gallon resin storage tank
I-ST-R2	7,400 gallon resin storage tank

They will be revised and added to the equipment list as follows:

Revised Emission Source ID	Emission Source Description
DS	Door skin inventory
ST-R1	Storage tank containing urea-formaldehyde resin (7,400 gallons capacity)
ST-R2	Storage tank containing urea-formaldehyde resin (7,400 gallons capacity)

VI. Potential Emission changes resulting from this modification

The following table is Table 3.2 of the application no. 5600169.06B and consistent with the requested revised Form D1 (see Section 2) Emissions are controlled as applicable.

Pollutant	Current Potential Emissions		Proposed Potential Emissions		Emissions Net Change	
	lbs/hr	tons/year	lbs/hr	tons/year	lbs/hr	tons/year
PM	22.13	77.5	20.04	79.6	-2.09	2.1
PM10	21.33	74.0	19.02	75.6	-2.31	1.6
SO2	1.11	4.9	1.11	4.9	0	0
NOx	13.01	56.9	13.05	57.0	0.04	0.1
CO	29.07	127.2	29.11	127.4	0.04	0.2
VOC	29.22	116.0	47.94	179.0	18.72	63.0
Total HAP	13.08	49.4	16.60	63.0	3.52	12.6

The following is a quote from the application:

"Hourly, emission rates (PM/PM10) will decrease from the facility's current potential emissions as a result of an increase in the filter control efficiency on the prime line paint booth."

The truck dump emission factor is based on an historic Fourth Edition AP-42 emission factor (Table 10.4-2) for a truck dump of 2 lb/ton PM, where all the PM is assumed to be PM10. Since the truck dump source at the Marion facility is enclosed on all three sides, and when dumping chips becomes totally enclosed, the emission factor used for PM10 emissions from the truck dump has been halved to 1 lb/ton PM10. Although JELD-WEN could assume a 50%

reduction, as roughly 50% of PM is PM10, JELD-WEN is only taking credit for the enclosed operation of the truck dump.”

The above discussion appears reasonable and was quoted intact. Note that as a result of this modification, the increase in potential VOC and HAP emissions are 54% and 28% respectively. Thus, the increases in emissions are as great or greater than what would be expected by an increase in production alone. Note that this is a PSD minor source so the 63 tpy increase in VOC does not make this a significant increase for PSD purposes.

VII. Regulatory review for the decreasing of the hot press cycle time (increasing throughput)

The following regulations apply to the Fiber Line 1 Hot Press (ID No. ES-P1) and Fiber Line 2 Hot Press (ID No. ES-P2) as shown in the current permit.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	Adequate ductwork and properly designed collectors	15A NCAC 2D .0512
Visible emissions	20 percent opacity	15A NCAC 2D .0521
Volatile organic compounds	See Section 2.2.(A)(1)	15A NCAC 2D .0958
Odorous emissions	See Section 2.2.(A)(2); State-enforceable only	15A NCAC 2D .1806
Formaldehyde	See Section 2.2.(A)(3); State-enforceable only	15A NCAC 2D .1100
Xylene Ammonia Ethylene glycol Monoethyl ether	See Section 2.2.(A)(4); State-enforceable only	15A NCAC 2Q .0711

These will be discussed below

15A NCAC 2D .0512: PARTICULATES FROM MISCELLANEOUS WOOD PRODUCTS FINISHING PLANTS

15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

15A NCAC 2D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS

15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

Reducing the press cycle time is not expected cause any compliance issues with the above regulations. The sources currently have no monitoring recordkeeping or reporting requirements and this modification will not require any as well. Continued compliance with these regulations is expected.

15A NCAC 2D .1100: CONTROL OF TOXIC AIR POLLUTANTS

15A NCAC 2Q .0711: EMISSION RATES REQUIRING A PERMIT

Numerous TAPs are emitted from the facility, but are primarily emitted from the combustion of natural gas and unadulterated wood, both of which are exempted from NC Toxics permitting.

The following TAPs are emitted from the facility according to the permit application (Form D1 and Table 1.C from 5600169.06B) At levels exceeding their respective TPERs:

Table 1

Arsenic & Compounds (ASC)	Formaldehyde (5000)
Benzene (71432)	1,2,3,6,7,8-Hexachlorodibenzi-p-dioxin (57653857)
Beryllium metal (7440417)	HCL (7647010)
Cadmium and Compounds (CDC)	

The following TAPs are emitted from sources at the facility other than the boilers according to the permit application (Form D1 and Table 1.C from 5600169.06B)

Table 2

Acetaldehyde (75070)	MIK (108101)
Acrolein (107028)	Phenol (108592)
Formaldehyde (50000)	Toluene (108883)
MEK (78933)	

The only TAP emitted above the TPER from 2D .1100 applicable sources is formaldehyde. It could be argued that since the wood fired boiler does combust adulterated fuel that all of its TAPs should be triggered into the toxics rules. The other six TAPS emitted above their TPER do not need to be considered for 2D .1100 because they are found in the unadulterated and adulterated fuels and the burning of the adulterated fuel alone would not expect to contribute a fraction great enough to exceed the TPER (conversation with William Willets, October 2007). Thus, one need only consider the TAPs released from the combustion of the adulterators in the fuels towards the calculations of TAP emissions with respect to the toxics rules. In this case, the adulterators are the adhesive and resins in the plywood in which only formaldehyde is of concern.

JMV discussed with Bonnie Basden of JELD-WEN the formaldehyde emissions associated with the combustion of the adulterated wood, since the numbers presented in the application are those calculated based on the combustion of unadulterated wood. She stated that the mass fraction of the adulterated wood burned is fairly small (a few percent) of which the mass of the resins (the adulterators) is also a small amount. She stated she would expect greater contributions to the formaldehyde emissions from the unadulterated wood combustion. Thus, for conservatism it was decided to model ALL of the formaldehyde from the wood fired boilers and not attempt to partition out what fraction of formaldehyde is released from the combustion of the adulterators only. Clearly, if larger fractions of adulterated wood (i.e., larger masses of resins) were to be combusted this analysis would have to be revisited.

The modeling report received September 12, 2007 included all sources of formaldehyde at the facility and reflects the increased potential hourly throughput of the presses and the changes in stack exit orientation as requested in the permit application. The stack orientation change was driven by the PM10 NAAQS issue; the formaldehyde would have met the AAL guideline without the modifications. The modeling also reflects concerns regarding the emission point velocities associated with the press vent stacks.

The following table shows the sources, the associated emission points and the modeled emission rates. The rates as presented here were derived from the gram/sec values listed in Table 3-1 from the modeling report received Sept 12, 2007. This table will be placed into the air permit.

Emission Source ID No.	Source description	Emission release point, ID No(s).	Emission release point description	Formaldehyde emission limit, pounds per hour,
B1	Wood-fired boiler	ERP-MC1	Multi-cyclone stack	0.192
B2	Natural gas-fired boiler	B2	boiler stack	2.46E-03
ES-FL1D	Fiber line 1 fiber drying operations	ER-BHD1, BHD2 and BHD3	three bagfilter stacks	0.118, per release point
ES-FL2D	Fiber line 2 fiber drying operations			
ES-F1	Fiber line 1 forming and shave-off operations	ERP-BHF1	bagfilter stack	4.89E-02
ES-1	Fiber line 1 collection/recycling operations	ERP-BH1	bagfilter stack	7.54E-03
ES-F2	Fiber line 2 forming and shave-off operations	ERP-BHF2	bagfilter stack	4.89E-02
ES-2	Fiber line 2 collection/recycling operations	ERP-BH2	bagfilter stack	7.54E-03
ES-P1	Fiber line 1 hot press	PV-1	press vent 1	3.89
ES-P2	Fiber line 2 hot press	PV-2	press vent 2	3.89
ES-1W	Stacked skins sizer trim process	ERP-BH1W	bagfilter stack	4.36E-02
DS	Doorskin inventory	ERP-DS	doorskin fugitive	0.146
R1	Resin tank 1	ERP-ST1	tank 1 vents	2.40E-04

R2	Resin tank 2	ERP-ST2	tank 2 vents	2.40E-04
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As formaldehyde was modeled using the maximum hourly emissions based on the maximum hourly production, no throughput records are necessary. The current permit contains monitoring requirements for stack height, the exhaust temperature and velocity for the hot presses. The presses (P1 and P2) comprise over 90% of the formaldehyde emissions facility-wide. Thus, if compliance for the hot presses can be demonstrated against its allowable emission rate (the rate modeled) a reasonable assurance of facility-wide compliance can be assumed. This approach will be continued in the revised permit.

It is known based on compliance inspections and inquiries throughout this application process (see Section II of this review) that the stack temperature and velocity can vary over the course of the year. In the April 19, 2007 letter (see Section II) JELD-WEN presents a discussion on the modeling analysis in response to the letter sent February 9, 2007. The letter attempts to explain why in some cases exceedances of the formaldehyde AALs do not reflect conditions that would be possible in reality. That is, the stack temperatures to some degree are a function of the ambient temperatures and the assumption of a very conservative low stack temperature (like the one found during the compliance inspection in January) applied to all meteorological scenarios (such as in the warmer summer months) is not possible.

In a written response to the permit engineer at that time, Jim Roller supervisor of the AQAB stated

“...gas temps and velocities will vary – need to establish a consistent method to determine each and allow for some tolerance in measured values. Just not feasible to model all possibilities and not practical to assume most conservative values.”

At this point progress in the permit application had stopped and then was assigned to me (JMV). Upon picking the conversation up with Mr. Roller, he agreed that choosing some reasonable average conditions instead of modeling all possible scenarios was reasonable based on an understanding of the facility and described in the April 19, 2007 letter from JELD-WEN.

Thus, MRR will be kept in the permit for these sources however the stack height restriction will be removed (the stack is built and hence the statement is unnecessary) and the velocity and temperatures for the press stacks will be revised to reflect the current modeling. Also the language will be changed to reflect that the velocity and temperature limits are annual averages, which is consistent with the model. Monitoring will be specified to measure the temperature and velocity of the applicable stacks once per shift. The rolling 12-month average will be based upon a sum of the per shift readings divided by the number of readings in the specified time period. In addition, throughput limits of 17,160 ft² – 1/8” per hour per press will be placed into the permit as these throughputs were used to derive the formaldehyde emission rates used in the modeling.

The TAPs listed in Table 2 above will be added to the 2Q .0711 stipulation.

VIII. Adding the three previously considered insignificant activities to the permitted equipment list

As described in the Introduction (Section I) above, the following three sources need to be added to the air permit since they are required to have a permit per 2Q .0702. All three of these sources contribute to the emissions of formaldehyde.

Revised Emission Source ID	Emission Source Description
DS	Doorskin inventory
ST-R1	Resin storage tank No. 1 (7,400 gallon storage capacity)
ST-R2	Resin storage tank No. 2 (7,400 gallon storage capacity)

Applicable Regulations

The following regulations are applicable to these sources:

15A NCAC 2D .0958: WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS
15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

Compliance is expected with these regulations. These sources already exist on site and no problems have been noted in the compliance inspections to date.

15A NCAC 2D .1100: CONTROL OF TOXIC AIR POLLUTANTS

These sources emit formaldehyde, which contribute to the facility-wide emissions exceeding the TPER and hence are triggered into modeling and permitting per 2Q .0702. See the discussion under “**Regulatory review for the decreasing of the hot press cycle time (increasing throughput)**” above.

IX. Compliance with the NAAQS for PM₁₀

The last items to be addressed by JELD-WEN to satisfy the SOC 2003-008 was to conduct source testing for PM₁₀ on bagfilters BHD1, 2 and 3 and to model for compliance with the PM₁₀ NAAQS per 2D .0501 and the formaldehyde AAL guideline per 2D .1100. The source testing was approved by the DAQ documented in a memo dated November 14, 2006. The formaldehyde modeling was discussed previously in this review and will not be addressed here.

However, the PM₁₀ modeling was submitted concurrently and was approved in a memo from Mark Yoder of the AQAB dated September 28, 2007. The modeling includes the changes requested in this application and background PM₁₀ concentrations. The results were as follows:

Pollutant	Averaging period	Total concentration (including background) (mg/m ³)	NAAQS (mg/m ³)	Percentage of NAAQS
PM ₁₀	24-hour	84.032	150	56
PM ₁₀	Annual	42.639	50	85

The following table lists the modeled emission rates. The rates as presented here were derived from the gram/sec values listed in Table 3-1 from the modeling report received Sept 12, 2007. The current permit stipulation will be revised to include these values.

Emission source ID No.	Source description	Emission release point, ID No(s).	Emission release point description	PM ₁₀ emission limit, pounds per hour
B1	Wood-fired boiler	ERP-MC1	multicyclone stack	8.59
B2	Natural gas-fired boiler	B2	boiler stack	0.249
ES-FL1D ES-FL2D	Fiber line 1 fiber drying operations Fiber line 2 fiber drying operations	ER-BHD1	bagfilter stack	1.03
		ER-BHD2	bagfilter stack	1.24
		ER-BHD3	bagfilter stack	0.129
ES-F1	Fiber line 1 forming and shave-off operations	ERP-BHF1	bagfilter stack	6.24E-03
ES-1	Fiber line 1 collection/recycling operations	ERP-BH1	bagfilter stack	4.02E-04
ES-F2	Fiber line 2 forming and shave-off operations	ERP-BHF2	bagfilter stack	6.24E-03
ES-2	Fiber line 2 collection/recycling operations	ERP-BH2	bagfilter stack	4.02E-04
ES-P1	Fiber line 1 hot press	PV-1	press vent 1	2.38
ES-P2	Fiber line 2 hot press	PV-2	press vent 2	2.38
ES-1W	Stacked skins sizer trim process	ERP-BH1W	bagfilter stack	0.402
ES-PB1.1	Paint booth	PB1	stack	1.20
I-RMH	Truck dump	RMH	fugitive	0.240

Note that the boiler B3 was not included in the analysis. This situation occurred the last time the facility modeled for NAAQS compliance. As stated in permit review T10 (February 2005):

The gas-fired boiler (27.6 million Btu per hour maximum heat input, ID No. ES-B3) was not modeled to show compliance with PM₁₀ emissions, along with the other sources. The applicant responded stating “ The reason the

temp boiler was included is because we do annual maintenance on the wood fired boiler and we bring in the temp boiler to operate while the wood fired boiler is down. The maintenance lasts about 10-days. If possible, we would like to keep the temp boiler in our permit. Can we include a condition that states the temp boiler can only operate while the wood fired boiler is not operating?"

A requirement in the permit prohibits the boilers ES-B3 and ES-B1 from operating simultaneously.

This limitation will be kept in the revised stipulation.

A throughput limitation 17,160 ft² – 1/8” basis per hour per hot press was included since this throughput was used to calculate the PM10 emission rates. Recordkeeping and reporting requirements were also added to make the limitations practically enforceable.

X. Facility-wide regulatory considerations

NSPS

Boiler ES-B2 is a NSPS Subpart Dc affected source with recordkeeping requirements. The modifications addressed in this application do not affect this source.

PSD

The facility is a PSD minor source.

NESHAPS

The boiler MACT (Subpart DDDDD) was vacated in its entirety on July 30, 2007. Thus it no longer applies to the facility and all conditions relating to this regulation have been removed

Subpart DDDD National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products applies to the facility. The facility has requested and has received an extension to its compliance date. The compliance date is October 1, 2008.

CAM

The primer coating operation based on the information found in the current application has a pre-control potential emissions of over 100 tpy of PM, thus making it a CAM affected source. Its after control emissions are less than 100 tpy. CAM will be addressed in the pending permit renewal process.

Attainment

McDowell County is in attainment for all pollutants.

XI. Changes to Existing Air Permit No. 06486T12

Condition No.	Changes
Cover Letter	<ul style="list-style-type: none"> Updated permit revision numbers, dates, etc. and Updated language to current permit shell (2.19) standards
Insignificant Activities List (IAL)	<ul style="list-style-type: none"> Revised layout to current DAQ standards Removed the two resin tanks (ID Nos. ST-R1 and R2) and the door skin inventory (ID No. ES-DS) which were added to the permitted equipment list because of 2D .1100 applicability.
Permit Cover page	<p>Updated dates, revision numbers, etc. to reflect the applications addressed.</p> <p>Added the statement “**This permit shall expire on the earlier of January 31, 2013 or the renewal of permit 06486T12 has been issued or denied.” This permit is being issued after the expiration date of the previous permit T12. A renewal application has been submitted to the DAQ.</p>
Equipment list	<ul style="list-style-type: none"> The material silos (ID Nos. ES-S3 and S4) were added to air permit T09 as a 502(b)(10) change. Permit T12 incorrectly identified them as 2Q .0501(c)(2) modifications. In any case, the asterisks indicating these sources as such were removed, since this permit has now gone through EPA and public review. The permit shield will now apply. The control devices ID Nos. BHD1, BHD2, and BHD2 were added to permit T10 as a 2Q.0102(c)(2) modification. The asterisks indicating these sources as such were removed, since this permit went through EPA and public review and the permit shield will now apply. Added the two resin tanks (ID Nos. ST-R1 and R2) and the door skin inventory (ID No. ES-DS) which were added to the permitted equipment list because of 2D .1100 applicability.

Condition No.	Changes
2.1.A. Regulation table	<ul style="list-style-type: none"> Added reference to 2D .1100 stipulation Removed reference to MACT Subpart DDDDD (boiler MACT)
2.1.A.4 (T12)	Removed stipulation at the Permittees request since the DC circuit's decision to vacate the boiler MACT (Subpart DDDDD) became binding on July 30, 2007.
2.1.B. Regulation table	Removed reference to MACT Subpart DDDDD(boiler MACT)
2.1.D. Regulation table	Added reference to the 2Q .0501(e) stipulation in Section 2.2.A.5 as it is applicable to these sources
2.1.A, B, C, E, F, G Regulation tables	Revised the regulated pollutant from particulate matter to PM ₁₀
2.1.C., E., F. Regulation tables	Revised the TAPs listed under the Regulated Pollutants table to show applicability of 2Q .0711. Note the existing TAPs listed were not removed even though the facility claims they are not emitted.
2.1.H	This section was added to address requirements for the two resin tanks (ID Nos. ST-R1 and R2) and the doorskin inventory (ID No. ES-DS) which were moved from the IAL to the permitted equipment list because of 2D .1100 applicability. A table listing the applicable regulations was included. All requirements under those regulations are referenced to and presented in Section 2.2 of the permit.
2.2.A.3	<p>The 2D .1100 stipulation was substantially reworked in layout and content to typical current DAQ standards. This included:</p> <ul style="list-style-type: none"> Separating the limitations, monitoring, recordkeeping, reporting and testing conditions and including the statutory authority for each condition; Revising the formaldehyde emission limitations table by including all recently modeled sources Removing the stack height requirements as they have already been implemented Changing the limitations of stack exhaust temperature to apply only to the hot presses Changing the limitations on exhaust temperatures to 294.06K (on a 12-month rolling average basis) and velocity to 17.00 m/s (on a 12-month rolling average basis), the parameters that were modeled. Adding a throughput limitation 17,160 ft² – 1/8” basis per hour per hot press Including monitoring, recordkeeping, reporting and testing requirements for the above limitations
2.2.A.4	Revised the toxics list to include six additional toxics emitted below their TPER as discussed in the current permit application. Note that the three existing TAPs from the previous permit remain.
2.2.A.5	<p>The 2D .0501 stipulation was substantially reworked in layout and content to current DAQ standards. This included:</p> <ul style="list-style-type: none"> Revising the PM₁₀ emission limitations table by including all recently modeled sources Adding a throughput limitation 17,160 ft² – 1/8” basis per hour per hot press Adding recordkeeping and reporting requirements
2.2.A.6.a.	<ul style="list-style-type: none"> Modified the paragraph to use language consistent with current DAQ practice. Revised the stipulation to include the compliance date of October 1, 2008 (or as amended by rule) for the existing affected sources. The Permittee was granted an extension in a letter from the DAQ dated August 2, 2007.
General Conditions	All general conditions were replaced with the current version (2.19). There should not be any substantive changes since last permit. The previous engineer updated the previous permit to the 2.19 versions but did so in a piecemeal fashion and some of the text differed.

XII. Compliance History

August 14, 2007 – NOV issued for late submittal of semi-annual monitoring requirements.

February 1, 2007 – NOV issued for violation of 2D.0512 monitoring requirements.

Five year compliance history borrowed from Brendan Davey's compliance inspection report of 01/25/07

b. Five year compliance history as obtained from the ARO electronic files:

- A Notice of Violation was issued October 4, 2005 for failure to conduct required weekly visual monitoring (primer coating operation) stipulated in Specific Condition 2.1.F.1.b. of Air Permit No. 06486T09 for three weeks in April/May 2005. Also, a NOV was issued of Specific Conditions 2.1.C.1.c., 2.1.D.1.b., and 2.1.G.1.b. for the Fiber Line fiber drying operations (ID No. FL1D and FL2D), forming and shave-off operations (ID No. ES-F1 and ES-F2), fiber Line fiber collection/recycling operations (ID No. ES-1 and ES-2), and the stacked skins sizer process (ES-1W) for failure to document the required monthly inspections for January and February 2005. These violation was reported in their semi-annual summary report.
- A Notice of violation dated August 30, 2004 was issued for failure to conduct the required daily visual monitoring [wood-fired boiler (ID No. B1)] stipulated in Specific Condition 2.1.A.3.c. of Air Permit No. 06486T09 for five days in January 2004. This violation was reported in their semi-annual summary report.
- A Notice of Violation dated February 13, 2004 was issued for failure to conduct the required monitoring stipulated in Specific Condition 2.1.A.3.c. of Air Permit No. 06486T08. This violation was reported by the Company in their annual compliance certification.
- A Notice of Violation and Notice of Recommendation for Enforcement was issued to the COMPANY on July 21, 2003 for failure to complete the required modeling demonstrating compliance with the National Ambient Air Quality Standard for particulate matter less than 10 microns (PM10) required by Stipulation 2.2.A.5. of Air Permit No. 06486T06 by the extended deadline of June 30, 2003.
- A Notice of Violation was issued to the COMPANY on July 10, 2003 for violation of Specific Condition 2.2.A.3. of Air Permit No. 06486T06 for emitting formaldehyde from "all other sources" above the permitted rate of 0.22 pounds per hour.

The above two violations are addressed in a current Special Order by Consent (see item c. below)

Other NOVs

- On July 9, 2002 a NOV was issued for permit condition B.6. for improper operation of the bagfilter (ID No. BH1W; 4,651 square feet of filter area) installed on the stacked skins sizer trim process.
- On June 21, 2002 a NOV was issued for permit condition B.6. for improper operation of the cyclone (ID No. D2; 132 inches in diameter) installed on Fiber Line 2 drying operations (ID No. FL2D).
- On February 21, 2001 a NOV was issued for failure to comply with 2Q .0700 – "Toxic Air Pollutant Procedures."
- On March 29, 2000 a NOV was issued for permit condition B.6. for improper operation of the Fiber Line 1 dryer tube which had a leak which was emitting wood fiber. On October 18, 1999 a NOV for continuing violation of air permit No. 6486R4 and 15A NCAC 2Q .0700 for failure to comply with formaldehyde modeling requirements.
- On August 30, 1999 a NOV was issued for permit condition B.6. for improper operation of the plant with loose fiber on the maintenance platform below the Line 2 dryer cyclone.
- On June 4, 1999 a NOV was issued for permit condition B.6. for operating Fiber Line 2 Dryer without the proper operation of the air cleaning device.
- On April 20, 1999 a NOV was issued for permit condition B.6. for operation of a ruptured silo. On January 6, 1999 a NOV was issued for permit condition B.6. for improper operation of a rotary valve on the Fiber Line No. 1 cyclone (ID No. D1) had a leaking seal which was causing fugitive wood dust emissions.

- On December 14, 1998 a NOV was issued for permit condition B.6. for improper operation of bagfilters on Fiber Line 1 (ID No. BHF1) and Fiber Line 2 (ID No. BHF2) which were emitting visible dust.
- c. **Special Order by Consent:** The Division and this Company entered into a Special Order by Consent SOC # 2003-08 effective December 29, 2003. The purpose of the SOC is to address the following two violations and related issues:

A Notice of Violation and Notice of Recommendation for Enforcement was issued to the COMPANY on July 21, 2003 for failure to complete the required modeling demonstrating compliance with the National Ambient Air Quality Standard for particulate matter less than 10 microns (PM10) required by Stipulation 2.2.A.5. of Air Permit No. 06486T06 by the extended deadline of June 30, 2003.

A Notice of Violation was issued to the COMPANY on July 10, 2003 for violation of Specific Condition 2.2.A.3. of Air Permit No. 06486T06 for emitting formaldehyde from “all other sources” above the permitted rate of 0.22 pounds per hour.

The Company paid the required settlement amount of \$7,000 on January 14, 2004.

Special Order by Consent Schedule:

**** The company appears to have satisfied all the requirements of the Special Order by Consent ending with the permit application received 2/10/06 mentioned in C. below. These issues will be fully resolved upon permit issuance.**

XIII. Public Notice

See chronology in Section II.

XIV. Comments and Conclusions

No comments from the general public or the EPA have been received in the time allotted.

XV. Recommendations

As no comments from the general public or the EPA have been received in the time allotted, the issuance of this air permit as drafted is recommended.

ATTACHMENT B

MACT Subpart QQQQ REVIEW

MACT Subpart QQQQ REVIEW

Upon review of comments on the DRAFT permit with the ARO (Brendan Davey) it was discovered that the draft permit did not address MACT Subpart QQQQ (National Emission Standards for Hazardous Air Pollutants: Surface Coating of Wood Building Products) applicability and compliance when it was in fact applicable. The review of its implementation into the permit is as follows:

On 1/29/05, Jeld-Wen timely submitted an initial notification for 40 CFR 63 Subpart QQQQ NESHAP for Surface Coating of Wood Building Products. The compliance date for this standard is May 28, 2006.

Note the facility is also subject to MACT Subpart DDDD. Although most of the sources at JELD-WEN are subject to 4D the primer coating operations consisting of the following permitted operations are not and but are subject to 4Q.

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
Primer Coating Operation			
ES-PB1.1 MACT Subpart QQQQ	dry filter type spray booth	N/A	N/A
ES-PB1.2 MACT Subpart QQQQ	steam-heated curing oven	N/A	N/A

§ 63.4682 What parts of my plant does this subpart cover?

- (a) This subpart applies to each new, reconstructed, and existing affected source.
- (b) The affected source is the collection of all of the items listed in paragraphs (b)(1) through (4) of this section that are used for surface coating of wood building products:
- (1) All coating operations as defined in §63.4781;
 - (2) All storage containers and mixing vessels in which coatings, thinners, and cleaning materials are stored or mixed;
 - (3) All manual and automated equipment and containers used for conveying coatings, thinners, and cleaning materials; and
 - (4) All storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation.

In addition to the primer coating operations as presented above the following insignificant sources are subject to 4Q:

Source ID No.	Source Description
I-ST-P	11,700 gallon primer storage tank

§ 63.4683 When do I have to comply with this subpart?

The date by which you must comply with this subpart is called the compliance date. The compliance date for each type of affected source is specified in paragraphs (a) through (c) of this section. The compliance date begins the initial compliance period during which you conduct the initial compliance demonstration described in §§63.4740, 63.4750, and 63.4760.

- (a) For a new or reconstructed affected source, the compliance date is the applicable date in paragraph (a)(1) or (2) of this section:
- (1) If the initial startup of your new or reconstructed affected source is before May 28, 2003, the compliance date is May 28, 2003.

- (2) If the initial startup of your new or reconstructed affected source occurs after May 28, 2003, the compliance date is the date of initial startup of your affected source.
 (b) For an existing affected source, the compliance date is the date 3 years after May 28, 2003.

This is an existing affected source so the compliance date is (was) May 28, 2006.

§ 63.4690 What emission limits must I meet?

- (b) For an existing affected source, you must limit organic HAP emissions to the atmosphere to no more than the applicable emission limit(s) in Table 2 to this subpart, determined according to the requirements in §63.4741, §63.4751, or §63.4761.

The applicable limit in Table 2 is

the affected source applies coating to products in the following subcategory. . .	Then, the organic HAP emission limit for the affected source, in grams HAP/liter solids (lb HAP/gal solids) ^{1,2} is:
1. Exterior siding and primed doorskins	7 (0.06)

The Permittee claims to use no HAP containing primer in the permit application and according to the 2008 compliance inspection report:

The primer used for the doorskin coating appears to have zero HAPs per the MSDS attached to this report. Kevin Heape indicated water is used for cleanup and thinning.

§ 63.4691 What are my options for meeting the emission limits?

You must include all coatings, thinners, and cleaning materials used in the affected source when determining whether the organic HAP emission rate is equal to or less than the applicable emission limit in §63.4690. To make this determination, you must use at least one of the three compliance options listed in paragraphs (a) through (c) of this section. You may apply any of the compliance options to an individual coating operation or to multiple coating operations as a group or to the entire affected source. You may use different compliance options for different coating operations or at different times on the same coating operation. However, you may not use different compliance options at the same time on the same coating operation. If you switch between compliance options for any coating operation or group of coating operations, you must document this switch as required by §63.4730(c), and you must report it in the next semiannual compliance report required in §63.4720.

- (a) Compliant material option. Demonstrate that the organic HAP content of each coating used in the coating operation(s) is less than or equal to the applicable emission limit(s) in §63.4690, and that each thinner and each cleaning material used contains no organic HAP. You must meet all the requirements of §§63.4740, 63.4741, and 63.4742 to demonstrate compliance with the emission limit using this option.

This is clearly the option chosen by the Permittee since according to the 2008 compliance inspection report:

“The primer used for the doorskin coating appears to have zero HAPs per the MSDS attached to this report. Kevin Heape indicated water is used for cleanup and thinning.”

§ 63.4692 What operating limits must I meet?

- (a) For any coating operation(s) on which you use the compliant material option or the emission rate without add-on controls option, you are not required to meet any operating limits.

Thus no operating limits per 4Q apply to the 4Q affected sources.

§ 63.4693 What work practice standards must I meet?

- (a) For any coating operation(s) on which you use the compliant material option or the emission rate without add-on controls option, you are not required to meet any work practice standards.

Thus no work practice standards per 4Q apply to the 4Q affected sources.

63.4700 What are my general requirements for complying with this subpart?

- (a) You must be in compliance with the emission limitations in this subpart as specified in paragraphs (a)(1) and (2) of this section.

(1) Any coating operation(s) for which you use the compliant material option or the emission rate without add-on controls option, as specified in §63.4691(a) and (b), must be in compliance with the applicable emission limit in §63.4690 at all times.

This should not be an issue.

§ 63.4701 What parts of the General Provisions apply to me?

Table 4 to this subpart indicates which parts of the General Provisions in §§63.1 through 63.15 apply to you.

Given the compliance option chosen by the Permittee, the implications of the general provisions are generally limited to proper notification and recordkeeping.

§ 63.4710 What notifications must I submit?

The deadlines for these notifications have all passed. Per the 2008 compliance inspection report:

The initial notification was received 9/25/03. The notification of compliance status was received June 19, 2007. Semiannual reports have been timely submitted, with the most recent being received 1/16/08.

No further comment is necessary.

§ 63.4720 What reports must I submit?

a) Semiannual compliance reports. You must submit semiannual compliance reports for each affected source according to the requirements of paragraphs (a)(1) through (7) of this section. The semiannual compliance reporting requirements may be satisfied by reports required under other parts of the Clean Air Act (CAA), as specified in paragraph (a)(2) of this section.

Per the 2008 compliance inspection report:

Semiannual reports have been timely submitted, with the most recent being received 1/16/08

See the draft condition at the end of this review for the reporting requirements in 40CFR63.4720 that are applicable to the Permittee given its chosen method of compliance.

§ 63.4730 What records must I keep?

The rule provides many record keeping requirements. However, given that the Permittee is using “no HAP” containing materials in the 4Q affected sources these records should be at a minimum. Essentially the Permittee must keep records of the materials used. The recent compliance inspection report does not address the quality of records being kept.

The following recordkeeping requirements in 40CFR63.4730 are applicable to the Permittee given its chosen method of compliance.

Note that a permit deviation is clearly defined in this condition. See the draft condition at the end of this review for the recordkeeping requirements in 40CFR63.4730 that are applicable to the Permittee given its chosen method of compliance.

§ 63.4731 In what form and for how long must I keep my records?

- (a) Your records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1). Where appropriate, the records may be maintained as electronic spreadsheets or as a database.
- (b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
- (c) You must keep each record on-site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). You may keep the records off-site for the remaining 3 years.

Self-explanatory.

Compliance Requirements for the Compliant Material Option

§ 63.4740 By what date must I conduct the initial compliance demonstration?

§ 63.4741 How do I demonstrate initial compliance with the emission limitations?

According to the 2008 inspection report this demonstration has been satisfied.

§ 63.4742 How do I demonstrate continuous compliance with the emission limitations?

- (a) For each compliance period to demonstrate continuous compliance, you must use no coating for which the organic HAP content determined using Equation 2 of §63.4741 exceeds the applicable emission limit in §63.4690; and use no thinner or cleaning material that contains organic HAP, determined according to §63.4741(a). A compliance period consists of 12 months. Each month after the end of the initial compliance period described in §63.4740 is the end of a compliance period consisting of that month and the preceding 11 months.
- (b) If you choose to comply with the emission limitations by using the compliant material option, the use of any coating, thinner, or cleaning material that does not meet the criteria specified in paragraph (a) of this section is a deviation from the emission limitations that must be reported as specified in §§63.4710(c)(6) and 63.4720(a)(5).
- (c) As part of each semiannual compliance report required by §63.4720, you must identify the coating operation(s) for which you used the compliant material option. If there were no deviations from the emission limitations in §63.4690, submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the reporting period because you used no coating for which the organic HAP content exceeded the applicable emission limit in §63.4690, and you used no thinner or cleaning material that contained organic HAP, determined according to §63.4741(a).
- (d) You must maintain records as specified in §§63.4730 and 63.4731.

In short, the Permittee will calculate the HAP content of the coating per the appropriate equation and compare it against the limit. For thinners and cleaning material the mass fraction of the HAP is to be zero per the method in 40CFR63.4741(a).

The compliance period is a rolling 12-month period.

The Permittee should have no problems complying with these continuous compliance requirements.

The following is a draft of how the QQQQ condition will appear in the DRAFT permit.

15A NCAC 2D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

Applicability [40 CFR 63.4681]

- a. For the emission sources subject to “**MACT Subpart QQQQ**” as indicated in the permitted equipment list, the Permittee shall comply with all applicable provisions, including the monitoring, recordkeeping, and reporting contained in Environmental Management Commission Standard 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT) as promulgated in 40 CFR 63, Subpart DDDD National Emission Standards for Hazardous Air Pollutants: Surface Coating of Wood Building Products.

Definitions and Nomenclature [40 CFR 63.4781]

- b. For the purpose of this permit condition, the definitions and nomenclature contained in 40 CFR 63.4781 shall apply.

40 CFR Part 63 Subpart A General Provisions [40 CFR 63.4710]

- c. The Permittee shall comply with the requirements of 40 CFR 63 Subpart A General Provisions according to the applicability of Subpart A to such sources, as identified in Table 4 to 40 CFR Part 63, Subpart QQQQ.

Testing [15A NCAC 02D .2601]

- d. If emissions testing is required, the testing shall be performed in accordance General Condition JJ. If the results of this test are above the limits given in condition e. and f., the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

Emission Limitations[15A NCAC 02Q .0508(b), 40 CFR 63.4690 and .4691]

- e. The organic HAP content of each coating used in the Subpart QQQQ affected sources shall not exceed 0.06 lbs HAP/gal solids.
- f. The thinners and cleaning materials used in the Subpart QQQQ affected sources shall contain no organic HAP.

Monitoring and Continuous Compliance Requirements [15A NCAC 02Q .0508(f), 40 CFR 63.4742]

- g. The Permittee shall meet the emission limitations of conditions e. and f. at all times for each compliance period.
- h. Organic HAP content (lbs HAP/gal solids) shall be determined using Equation 2 in 40 CFR 63.4741.
- i. HAP content of thinners and cleaning materials shall be determined according to 40 CFR 63.4741(a).
- j. A compliance period consists of 12 months. Each month after the end of the initial compliance period described in 40 CFR 63.4740 is the end of a compliance period consisting of that month and the preceding 11 months.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the requirements in condition g. through k. are not met.

Recordkeeping [15A NCAC 2Q .0508(f), 40 CFR 63.4730]

- k. The following records must be kept. Failure to collect and keep these records is a deviation from the applicable standard.
 - i. A copy of each notification and report that you submitted to comply with this subpart, and the documentation supporting each notification and report.
 - ii. A current copy of information provided by materials suppliers or manufacturers, such as manufacturer's formulation data, or test data used to determine the mass fraction of organic HAP and density for each coating, thinner, and cleaning material and the volume fraction of coating solids for each coating. If you use information provided to you by the manufacturer or supplier of the material that was based on testing, you must keep the summary sheet of results provided to you by the manufacturer or supplier.
 - iii. For each compliance period, the following records:
 1. A record of the coating operations at which you used each compliance option and the time periods (beginning and ending dates and times) you used each option.
 2. For the compliant material option, a record of the calculation of the organic HAP content for each coating, using Equation 2 of 40 CFR 63.4741.
 - iv. A record of the name and volume of each coating, thinner, and cleaning material used during each compliance period.
 - v. A record of the mass fraction of organic HAP for each coating, thinner, and cleaning material used during each compliance period.

- vi. A record of the volume fraction of coating solids for each coating used during each compliance period.
- vii. A record of the density for each coating used during each compliance period.
- viii. You must keep records of the date, time, and duration of each deviation.
- l. As specified in 40 CFR 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
- m. You must keep each record on-site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). You may keep the records off-site for the remaining 3 years.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the recordkeeping requirements in condition k. through m. are not met.

Reporting [15A NCAC 2Q .0508(f), 40CFR 63.4720]

- n. The Permittee shall submit a semiannual compliance report (summary report of monitoring and recordkeeping activities) postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.
- o. The semiannual compliance report must contain the following information:
 - i. Company name and address.
 - ii. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.
 - iii. Date of report and beginning and ending dates of the reporting period. The reporting period is the 6-month period ending on June 30 or December 31. Note that the information reported for each of the 6 months in the reporting period will be based on the last 12 months of data prior to the date of each monthly calculation.
 - iv. Identification of the compliance option or options specified in 40 CFR 63.4691 that you used on each coating operation during the reporting period. If you switched between compliance options during the reporting period, you must report the beginning and ending dates you used each option.
- p. If there were no deviations from the emission limitations in 40 CFR 63.4690 that apply to you, the semiannual compliance report must include a statement that there were no deviations from the emission limitations during the reporting period.
- q. If there was a deviation from the applicable emission limit in 40 CFR 63.4690, the semiannual compliance report must contain the information in paragraphs (i) through (iv).
 - i. Identification of each coating used that deviated from the emission limit, each thinner and cleaning material used that contained organic HAP, and the dates and time periods each was used.
 - ii. The calculation of the organic HAP content (using Equation 2 of 40 CFR 63.4741) for each coating identified in paragraph (i) of this section. You do not need to submit background data supporting this calculation (e.g., information provided by coating suppliers or manufacturers, or test reports).
 - iii. The determination of mass fraction of organic HAP for each coating, thinner, and cleaning material identified in paragraph (i) of this section. You do not need to submit background data supporting this calculation (e.g., information provided by material suppliers or manufacturers, or test reports).
 - iv. A statement of the cause of each deviation.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the reporting requirements in n. through q. are not met.