

Application Review

Issue Date:

Region: Fayetteville Regional Office
County: Montgomery
NC Facility ID: 6200061
Inspector's Name: Abdul Kadir
Date of Last Inspection: 11/14/2019
Compliance Code: 3 / Compliance - inspection

<p style="text-align: center;">Facility Data</p> <p>Applicant (Facility's Name): Unilin Flooring, N.V.</p> <p>Facility Address: Unilin Flooring, N.V. 149 Homanit USA Road Mount Gilead, NC 27306</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 style="text-align: center;">Permit Applicability (this application only)</p> <p>SIP: 02D .0501, .0504, .0512, .0515, .0516, .0521, .0614 NSPS: NESHAP: 02D .1111 (DDDD, ZZZZ) PSD: 02D .0530, .0530(u) PSD Avoidance: NC Toxics: 112(r): Other:</p>
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Contact Data			Application Data
<p style="text-align: center;">Facility Contact</p> <p>Ric Aikman General Manager (910) 439-6959 149 Homanit USA Road Mount Gilead, NC 27306</p>	<p style="text-align: center;">Authorized Contact</p> <p>Ric Aikman General Manager (910) 439-6959 149 Homanit USA Road Mount Gilead, NC 27306</p>	<p style="text-align: center;">Technical Contact</p> <p>Ric Aikman General Manager (910) 439-6959 149 Homanit USA Road Mount Gilead, NC 27306</p>	<p>Application Number: 6200061.19B and 6200061.20C Date Received: 09/27/2019 and 05/01/2020 Application Type: Renewal; Modification Application Schedule: TV-Renewal w/TV-Sign-501(b)(2) Part II; TV-Minor</p> <p style="text-align: center;">Existing Permit Data</p> <p>Existing Permit Number: 08803/T23 Existing Permit Issue Date: 03/09/2020 Existing Permit Expiration Date: 04/30/2020</p>

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2018	12.02	135.20	710.11	126.94	116.20	120.61	87.68 [Methanol (methyl alcohol)]
2017	9.90	137.02	712.53	127.21	116.86	117.28	87.61 [Methanol (methyl alcohol)]
2016	12.01	135.03	778.70	127.66	126.25	125.73	96.43 [Methanol (methyl alcohol)]
2015	12.76	135.51	700.74	127.89	111.78	178.53	97.86 [Methanol (methyl alcohol)]
2014	11.68	132.87	734.53	125.40	113.97	205.59	108.12 [Methanol (methyl alcohol)]

<p>Review Engineer: Urva Patel</p> <p>Review Engineer's Signature: _____ Date: _____</p>	<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue 08803/T24 Permit Issue Date: Permit Expiration Date:</p>
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1. Purpose of Application:

Currently, Unilin Flooring, N.V. holds Title V Permit No. 08803T23 with an expiration date of April 30, 2020 for a thin-high density fiberboard (THDF) plant in Mt. Gilead, Montgomery County, North Carolina.

This permit consolidates two separate permit applications. (**Application Nos. 6200061.19B and 6200061.20C**).

Application ID No. 6200061.19B

The Title V renewal application with Title V-Significant Modification-501(b)(2) Part II (**Application No. 6200061.19B**) was received on September 27, 2019, or at least six months prior to the expiration date of the Title V permit. Therefore, Air Permit No. 08803T23 shall not expire until the renewal permit has been issued or denied, per the application shield in General Condition 3.K. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

In addition, Title V-Significant Modification-501(b)(2) Part II application is submitted as per 15A NCAC 02Q .0504 and permit condition NN in Section 3 of Permit No. 08803T22 (issued July 11, 2019) with this permit renewal application.

On December 11, 2020, the Department received request (via email) for removal of a rotographic surface coating line (**ID No. ES-50**) and associated permit condition (40 CFR 63, Subpart QQQQ).

Application ID No. 6200061.20C

The minor modification permit application (**Application No. 6200061.20C**) was received on May 1, 2020, for the installation of a Mat Steam Injection system (**ID No. ES-MSI**) with a dust collection system at the entrance to the press. The dust collection system consists of a Vacuum, a Cyclone (**ID No. CD-CYMSI**), a Fan, and a Fabric Filter (**ID No. CD-FFMSI**). The Permittee was written a 10-day letter allowing the construction of the source and control device and operation of those units under the interim permit conditions provided in the application on May 7, 2020 as shown below.

2. Facility Description:

Unilin Flooring N.V. owns and operates a THDF plant (SIC 2493) that is located in Mt. Gilead, Montgomery County, NC. The current facility has a design capacity of approximately 800 tons of THDF per day. The facility uses pine shavings and chips as the main raw materials. The chips are refined, mixed with resin, and dried in the flash tube dryer. After being dried to approximately 10% moisture, the fibers are sent to the press to be formed into boards. After the boards are formed, they are cooled, sawed, trimmed and sanded to product specifications. The plant also has a heating plant, which supplies direct heat to the dryer and indirectly heats hot oil for use in the press.

3. Permitting History and Application Chronology:

Permit History (since last TV renewal)

May 26, 2015	Permit 08803T19 issued as TV renewal.
August 12, 2016	Permit 08803T20 issued as a minor modification for addition of propane firing capability to the heating plant and the two evaporators at the site.
October 10, 2017	Permit 08803T21 issued as a Significant modification for addition of one NESHAP regulation to the permit; 40 CFR 63, Subpart QQQQ (Surface Coating of Wood Building Products). This regulation is applicable to Rotographic surface coating line (ID No. ES-50).
July 11, 2019	Permit 08803T22 issued as a 501(b)(2) Part I significant modification for the use of urea formaldehyde (UF) resin in the production areas and to install a biofilter.
March 9, 2020	Permit 08803T23 issued as an administrative amendment for correction of a typographical error in the permit condition 2.2 B.2.m.

Application Chronology

September 27, 2019	Received application as a Title V – renewal with 501(b)(2) Part II significant modification.
October 7, 2019	Sent acknowledgement letter indicating that the application (6200061.19B) for renewal was complete.
April 16, 2020	Draft permit sent to Supervisor for review.
May 1, 2020	Received application as a Title V – minor modification.

May 7, 2020 Sent acknowledgement letter indicating that the application (6200061.20C) for minor modification was complete except e-payment of \$988.

May 11, 2020 Received e-payment of \$988.

October 27, 2020 Sent query regarding MACT QQQQ to the facility /Trinity consultants.

December 11, 2020 Received email request for removal of a rotographic surface coating line (**ID No. ES-50**) and associated permit conditions (MACT QQQQ) from the permit.

January 14, 2021 Draft permit sent to applicant and Fayetteville regional office.

February 2, 2021 Received comments from the facility – Trinity Consultants - Mr. Dale Overcash.

February 16, 2021 Sent revised draft included the revisions on permit condition 2.1 B.3.d, SSMP revision of MACT DDDD, permit condition 2.2 B.2.m, and other minor typos. Email included concern for VE permit condition language.

March 1, 2021 Received a request from the Trinity consultants to change Biofilter testing requirement period from 24 months to 25 months.

March 4, 2021 Sent revised drafts including the reasoning to decline the change to Biofilter testing requirement periods. For detailed information, see Section 11.

4. Summary of Changes to the Existing Permit (Permit No. 08803T23):

Page No.	Section	Description of Changes
Cover Letter	N/A	<ul style="list-style-type: none"> Updated cover letter with application number, permit numbers, dates, fee class, PSD increment statement, and Director name.
Permit Cover	N/A	<ul style="list-style-type: none"> Inserted new issuance and complete application date, application number, facility information.
4, 6, 9, 19	Section 1, Table 2.1 A 2.1 B 2.2 A	<ul style="list-style-type: none"> Removed asterisk (*) from Biofilter (ID No. CD-BIO)
3, 12-14	Section 1, Table 2.1 C	<ul style="list-style-type: none"> Installation of Mat Steam Injection System (ID No. ES-MSI) controlled with a cyclone (ID No. CD-CYMSI) and a fabric filter (ID No. CD-FFMSI)
15	2.1 E.3	<ul style="list-style-type: none"> Revised MACT ZZZZ permit condition to current language. Removal of ID No. IES-PUMP as its insignificant activity
5, 15, 31	Section 1, Table 2.1 G 2.3 B	<ul style="list-style-type: none"> Removal of one rotographic surface coating line (ID No. ES-50) and associated permit condition (40 CFR 63, Subpart QQQQ) Renumbered remaining permit conditions for consistency
20	2.2 B.1	<ul style="list-style-type: none"> Revision of MACT DDDD permit condition language.
22 26	2.2 B.1.m 2.2 B.2.m	<ul style="list-style-type: none"> Removal of “pounds per oven dry tons” as it was not a MACT requirement.
25	2.2 B.2.k	<ul style="list-style-type: none"> Addition of biofilter (ID No. CD-BIO) operating parameter (biofilter bed temperature range)
22, 23, 23, 25, 27, 27	2.2 B.1.j 2.2 B.1.o.ii 2.2 B.1.u.iv 2.2 B.2.i 2.2 B.2.t.ii 2.2 B.2.aa.iv	<ul style="list-style-type: none"> Revised SSMP language in the permit conditions as per 40 CFR 63, Subpart DDDD
19, 29	2.2 A.2 2.2 C	<ul style="list-style-type: none"> Revised CAM format based on SSCB (Mr. Samir Parekh) comments.
32	Section 3	<ul style="list-style-type: none"> Updated General Conditions from version 5.3 to current shell version 5.5

5. Compliance Status:

DAQ has reviewed the compliance status of this facility. During the most recent inspection conducted on November 14, 2019, Abdul Kadir of the Fayetteville Regional Office indicated that the facility appeared to be in compliance with all applicable requirements. Additionally, a signed Title V Compliance Certification (Form E5) indicating that the facility was in compliance with all applicable requirements was submitted with Application No. 6200061.19B on September 27, 2019.

Five-year Compliance History:

- The facility was inspected on November 14, 2019 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on December 18, 2018 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on November 11, 2017 and appeared to be in compliance with all applicable air quality regulations.
- On May 8, 2017, a Notice of Violation (NOV) was issued for being in non-compliance with applicable requirements of General Condition JJ and non-compliance with applicable requirements of 40 CFR 63, Subpart QQQQ. This was resolved on May 24, 2017.
- On June 10, 2014, an NOV was issued for failure to convert to 100% MDI and achieve full compliance with the MACT (40 CFR 63, Subpart DDDD). This NOV initiated a Special Order by Consent (SOC) that was resolved on July 28, 2016.

6. New/Modified Equipment/Changes in Emissions:

Application ID No. 6200061.19B

This permit application is submitted as a permit renewal application with 501(b)(2) Part II significant modification. The second step application was submitted pursuant to Permit No. 08803T22. That modification included increased use of UF resins, installation of biofilter to control formaldehyde and methanol from the process, and 10% increase of the short-term production rates. Attachment A contains the original technical review for the Part I processing. No additional technical review is required for this procedural Part II application. The permit will be updated as necessary in support of the TV renewal portion of the application.

The Department received email request, on December 11, 2020, to remove one rotographic surface coating line (ID No. ES-50) and MACT QQQQ from the permit. Following is a part of email request received by the Department:

On October 27, 2020, Trinity Consultants (Trinity) received some questions from the Division of Air Quality (DAQ) regarding the applicability of 40 CFR Part 63, Subpart QQQQ to the coating line (ES-50) at the Unilin Flooring, N.V. (Unilin), Mt. Gilead Plant. Trinity forwarded your email to my attention for any feedback.

Unilin, ironically, had made a decision to discontinue coating operations on the coating line (ES-50) in October. The line has been shutdown and will not be operated again at the Mt. Gilead site. It is our plan to sale the line, and then have it dismantled and sent to whomever buys the coating line.

As a result of the above decisions regarding the line, please remove the coating line (ES-50) and the Subpart QQQQ requirements from the permit renewal that is currently under development at DAQ.

Therefore, the Department is going to remove a rotographic surface coating line (ID No. ES-50) and associated permit condition from the permit.

Application ID No. 6200061.20C

The permit application is submitted as TV-Minor Modification. The facility proposes to install a mat steam injection system (ID No. ES-MSI) with a dust collection system at the entrance to the press. The mat steam injection system will have two

perforated belts above and below the product, with each containing a steam box. The addition of this unit will increase the quality of the product produced at the plant. A cleaning apparatus consisting of forced hot air delivery, a brush roller, and a high velocity vacuum system will remove the buildup of dust within the perforations of the belts. The vacuum system will remove dust from the unit that will travel to a dust collection system. The dust collection system consists of a vacuum, a cyclone (ID No. CD-CYMSI), a fan, and a bag filter (ID No. CD-FFMSI).

Construction of the mat steam injection system will result in an increase of particulate matter (PM) emissions. Emissions result through the cleanup and removal of dust buildup from ES-MSI. PM emissions are controlled by the dust removal system. The vacuum removes dust buildup from the mat steam injector system, that is transported through a duct to a cyclone which removes most of the dust. The dust drops out of the cyclone into a rotary air lock and transport bins. The fan keeps velocity high, and the discharge from the cyclone goes through a bag filter to remove any residual dust. The cyclone and bag filter work together as a system to achieve a total control efficiency of 99.95%. Emissions are estimated according to a manufacturer provided 10 kg/hr (22 lb/hr) dust loading to the control system, and a control efficiency of 99.95%.

Uncontrolled PM Emission rate = 22 lb/hr * 8760 hr/yr/ 2000 lb/ton
 = 96.36 tpy

Controlled PM Emissions = 96.36 tpy * (1-0.9995)
 = 0.04818 tpy
 = 0.04818 * 2000/8760
 = 0.011 lb/hr

PM emissions are calculated as 0.011 lb/hr and 0.05 tpy.

Equipment being added to the list of permitted sources and control devices:

Emission Source	Emission Source Description	Control Device	Control Device Description
ES-MSI	Mat Steam Injection System	CD-CYMSI CD-FFMSI	One rectangle Cyclone (31" high and 15" wide) One Fabric Filter (1,354 square feet of filter area)

7. Regulatory Review

Unless specifically noted, a detailed discussion of the following list of applicable permit conditions is not included as applicability status as a result of these applications has not changed. The facility is expected to be in continued compliance.

A. One heating plant (ID No. ES-HP) consisting of:

- one wood-fired boiler (ID No. ES-HP-1);
- one sanderdust duct burner system (ID No. ES-HP-2);
- two No. 2 fuel oil-fired auxiliary burners (ID Nos. ES-HP-3 and ES-HP-4);
- one No. 2 fuel oil-fired auxiliary burner (ID No. ES-HP-5),
- two natural gas fired auxiliary burners (ID Nos. ES-HP-6 and ES-HP-7);
- one natural gas fired auxiliary burner (ID No. ES-HP-8);
- two propane fired auxiliary burners (ID Nos. ES-HP-9 and ES-HP-10);
- one propane fired auxiliary burner (ID No. ES-HP-11)

with associated multicyclone (ID No. CD-01), aqueous-assisted fiber removal chamber (ID No. CD-SCRB) and Biofilter (ID No. CD-BIO), in series.

Applicable Regulations:

- 15A NCAC 02D .0504: "Particulates from Wood Burning Indirect Heat Exchangers"
- 15A NCAC 02D .0516: "Sulfur Dioxide Emissions from Combustion Sources"
- 15A NCAC 02D .0521: "Control of Visible Emissions"
- 15A NCAC 02D .0530: "Prevention of Significant Deterioration" (VOC)
- 15A NCAC 02D .0614: "Compliance Assurance Monitoring"
- 15A NCAC 02D .1111: "Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD)"

B.

- **One blowline flash-tube dryer (ID No. ES-DRY);**
- **One hot oil heated continuous board press (ID No. ES-BP);**
- **One pressurized refiner (ID No. ES-RFN);**

all controlled by one aqueous-assisted fiber removal chamber (ID No. CD-SCRB) and Biofilter (ID No. CD-BIO), in series

Applicable Regulations:

- 15A NCAC 02D .0501: "Compliance with Emission Control Standards"
- 15A NCAC 02D .0515: "Particulates from Miscellaneous Industrial Processes"
- 15A NCAC 02D .0521: "Control of Visible Emissions"
- 15A NCAC 02D .0530: "Prevention of Significant Deterioration" (VOC)
- 15A NCAC 02D .0614: "Compliance Assurance Monitoring"
- 15A NCAC 02D .1111: "Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD)"

C.

- **One dried fiber grader system No. 1 (ID No. ES-21) controlled by one simple cyclone (ID No. CD-CY21) in series with one bagfilter (ID No. CD-FF21);**
- **One dried fiber grader system No. 2 (ID No. ES-22) controlled by one simple cyclone (ID No. CD-CY22) in series with one bagfilter (ID No. CD-FF22);**
- **One mat trimmings return air system (ID No. ES-23) controlled by two parallel simple cyclones (ID Nos. CD-CY23A and CD-CY23B) in series with one bagfilter (ID No. CD-FF23);**
- **One fine sanderdust pneumatic conveyor system (ID No. ES-31) controlled by one bagfilter (ID No. CD-FF31);**
- **One coarse sanderdust pneumatic conveyor system (ID No. ES-32) controlled by one bagfilter (ID No. CD-FF32);**
- **One sawing and cutting pneumatic conveyor system (ID No. ES-33) controlled by one bagfilter (ID No. CD-FF33);**
- **One press trim saw and dust collection system (ID No. ES-34) controlled by one simple cyclone (ID No. CD-CY34) in series with one bagfilter (ID No. CD-FF34)**
- **Mat Steam Injection System (ID No. ES-MSI) controlled by one cyclone (ID No. CD-CYMSI) and one Fabric Filter (ID No. CD-FFMSI)**

Applicable Regulations:

- 15A NCAC 02D .0512: "Particulates from Miscellaneous Wood Products finishing Plants"
- 15A NCAC 02D .0521: "Control of Visible Emissions"
- 15A NCAC 02D .0614: "Compliance Assurance Monitoring"
- 15A NCAC 02D .1111: "Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD)"

D.

- **Five fixed roof resin storage tanks (ID Nos. ES-40a through ES-40e)**
- **One fixed roof wax storage tank (ID No. ES-40f)**

Applicable Regulations:

- 15A NCAC 02D .1111: "Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD)"

E. One No. 2 fuel oil-fired 755 horsepower emergency generator (ID No. ES-41)

Applicable Regulations:

- 15A NCAC 02D .0516: "Sulfur Dioxide Emissions from Combustion Sources"
- 15A NCAC 02D .0521: "Control of Visible Emissions"
- 15A NCAC 02D .1111: "Maximum Achievable Control Technology (40 CFR 63, Subpart ZZZZ)"

F.

- **Two fugitive board breaking and conveyor systems (ID No. ES-F-08 and ES-F-09)**
- **One fugitive board cooling and stacking area (ID No. ES-F-BC)**

Applicable Regulations:

- 15A NCAC 02D .0521: "Control of Visible Emissions"
- 15A NCAC 02D .1111: "Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD)"

G. Pneumatic chip handling infeed system (ID No. ES-FHS) controlled by one high efficiency cyclone (ID No. CD-CYFHS) installed in series with one bagfilter (ID No. CD-FF23)

Applicable Regulations:

- 15A NCAC 02D .0512: “Particulates from Miscellaneous Wood Products finishing Plants”
- 15A NCAC 02D .0521: “Control of Visible Emissions”
- 15A NCAC 02D .0614: “Compliance Assurance Monitoring”

H. Two natural gas-fired evaporators (ID Nos. ES-EVAP and ES-EVAP2)

Applicable Regulations:

- 15A NCAC 02D .0515: “Particulates from Miscellaneous Industrial Processes”
- 15A NCAC 02D .0516: “Sulfur Dioxide Emissions from Combustion Sources”
- 15A NCAC 02D .0521: “Control of Visible Emissions”
- 15A NCAC 02D .1111: “Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD)”

Application ID No. 6200061.20C

A. The proposed equipment to be added is subject to the following regulations:

- 15A NCAC 02D .0512: Particulates from Wood Products Finishing Plants
The allowable emission rates for PM from working, sanding or finishing of woods shall not be discharged from any stack, vent or building into the atmosphere without providing adequate duct work and properly designed collectors or such other devices as approved by the Commission. The ambient air quality standards shall not exceed beyond the property line. Collection efficiency shall be determined on the basis of weight. The control efficiency is 99.95%.

Process	Dust Loading rate, lb/hr	Uncontrolled PM Emission rate, tpy	Controlled PM Emission rate, lb/hr
Mat Steam Injection System	22	96.36	0.011

To ensure compliance with this standard, the Permittee will be required to perform monitoring, recordkeeping and reporting for the operation of the associated control devices. Compliance is expected.

- 15A NCAC 02D .0521: Control of Visible Emissions
As per 15A NCAC 02D .0521(d), for sources manufactured after July 1, 1971, the visible emissions shall not be more than 20% when averaged over a six-minute period. However, six-minute averaging periods may exceed 20% not more than once in any hour and not more than four times in any 24-hour period. In no event, shall the six-minute average exceed 87% opacity. The Permittee will be required to ensure compliance through monthly visible emissions monitoring, recordkeeping and reporting. Compliance is expected.

8. NSPS, NESHAP/MACT, NSR/PSD, 112(r), CAM

NSPS

This facility is NOT subject to New Source Performance Standards (NSPS), 40 CFR 60. This permit renewal with modification does not affect this status.

NESHAP/MACT

This facility is a major source for HAPs emissions and is subject to the National Emission Standards for Hazardous Air Pollutants, 40 CFR 63 for the Subparts noted below. The permit conditions have been updated to current applicability, as necessary. Unless as indicated below, this permit renewal with modification does not affect this status. The facility is expected to be in continued compliance.

- 40 CFR Part 63 Subpart DDDD for Plywood and Composite Wood Products – The Press (**ID No. ES-BP**), Heating Plant (**ID No. ES-HP**), Refiner (**ES-RFN**) and Dryer (**ID No. ES-DRY**) are subject to this regulation (The Permittee shall comply with this permit condition when utilizing methyl-diphenyl diisocyanate [MDI] resins). The Biofilter (**ID No. CD-BIO**) is subject to this regulation (The Permittee shall comply with this permit condition when utilizing urea formaldehyde [UF] resins).

All emission sources (Press, Heating Plant, Refiner, Dryer and Biofilter) are subject to this regulation, the Department transcribed two separate permit conditions. As per facility review comments on technical review of 08803T22 permit (on July 1, 2019), Mr. Dale Overcash commented on permit condition language MACT DDDD with a comment "While it is highly likely compliance will be demonstrated with the formaldehyde emissions reduction requirement, Unilin desires that all options be listed in the permit."

As per facility review comment on technical review of 08803T24 (on February 2, 2021), The permit condition for biofilter (2.2 B.2) - testing requirement was revised.

The current permit includes detailed Subpart DDDD language as it applies to emission sources at Unilin except the following changes:

- **Permit Conditions 2.2 B.1.j;**
- **Permit Condition 2.2 B.1.o.ii;**
- **Permit Condition 2.2 B.1.u.iv;**
- **Permit Condition 2.2 B.2.i;**
- **Permit Condition 2.2 B.2.m;**
- **Permit Condition 2.2 B.2.t.ii; and**
- **Permit Condition 2.2 B.2.aa.iv;**

As per 40 CFR 63.2250(c), the Permittee/facility must develop a written SSMP according to the provisions in §63.6(e)(3). For any affected source that commences construction or reconstruction after September 6, 2019, this paragraph (c) does not apply on and after August 13, 2020 or initial startup of the affected source, whichever is later. For all other affected sources, this paragraph (c) does not apply on and after August 13, 2021.

- 40 CFR Part 63 Subpart QQQQ for Surface Coating of Wood Building Products – The One rotographic surface coating line (**ID No. ES-50**) was subject to this regulation. As noted above, the Permittee has requested the removal of this source as part of the Title V renewal.
- 40 CFR Part 63 Subpart ZZZZ for Stationary Reciprocating Internal Combustion Engines – The No. 2 fuel oil-fired 755 horsepower emergency generator (**ID No. ES-41**) is subject to this regulation. The current permit includes detailed Subpart ZZZZ revised language as it applies to emission source at Unilin. The RICE at this facility are considered emergency-use. The only requirements for emergency-use engines that have a capacity less than 500 horsepower are: regular required maintenance, installation of a non-resettable hour meter, and record of all maintenance activities. While no reporting for this generator is required by the MACT, 15A NCAC 02Q .0508(f)(1) requires that all monitoring activities be reported twice per year.

NSR/PSD

The facility is a major source under the Federal Prevention of Significant Deterioration (PSD) program. The potential emissions of VOCs are greater than 250 tons per year. This facility is located in Montgomery County which is considered an attainment area. Montgomery County’s minor source baseline dates for PM₁₀ have been triggered. The Permittee is subject to the following Prevention of Significant Deterioration permit conditions:

- 15A NCAC 02D .0530, Prevention of Significant Deterioration

For PSD purposes, the following "Best Available Control Technology" (BACT) permit limitations shall not be exceeded for the Heating Plant (**ID No. ES-HP**), blowline flash-tube dryer (**ID No. ES-DRY**), hot oil heated continuous board press (**ID No. ES-BP**) and pressurized refiner (**ID No. ES-RFN**).

Emission Source	Pollutant	Emission Limits	Control Technology
Heating Plant (ID No. ES-HP) Blowline flash-tube dryer (ID No. ES-DRY) Hot oil heated continuous board press (ID No. ES-BP) Pressurized refiner (ID No. ES-RFN)	Volatile Organic Compounds	Total VOC emissions shall not exceed 7.49 pounds/Oven-Dried Tons (ODT)	One aqueous-assisted fiber removal chamber (ID No. CD-SCRB)

This permit modification does not affect this status.

- 15A NCAC 02D .0530(u): Use of Projected Actual Emissions to avoid Applicability of Prevention of Significant Deterioration Requirement

The Permittee has used projected actual emissions to avoid applicability of prevention of significant deterioration requirements for the project to install a new biofilter (**ID No. CD-BIO**) and use of UF resins as specified in Application No. 6200061.19A.

Pollutant	Projected Actual Emissions* (tpy)
CO	151.10
NO _x	168.19
PM	135.80
PM-10	135.71
PM-2.5	135.64
SO ₂	35.20
VOC	792.68

* The projected actual emissions are not enforceable limitations. If the reported actual emissions exceed the projected actual emissions, the Permittee shall include in its annual report an explanation as to why actual emissions exceeded the projected actual emissions.

The permit requires recording of actual emissions for the pollutants in the Table above in tons per year on a calendar year basis for five years following the resumption of regular operations after the maintenance on the new Biofilter (**ID No. CD-BIO**) and use of UF resins as fully described in Application No. 6200061.19A and submit a report of the emissions of the pollutants to the Director within 60 days after the end of each calendar year. This permit modification does not affect this status. Please, see Attachment A for more details.

Since the modification from permit application 6200061.20C results in an increase in potential emissions of following air pollutants, increment tracking will be required.

*An increase of $PM_{10} = 0.05 * 2000 / 8760 = 0.011 \text{ lb/hr}$*

As shown above, emission increases from this project is less than the respective PSD Significant emission rates for PSD regulated pollutant (PM_{10} of 15 TPY). Hence, PSD is not triggered for this minor modification and does not change this status.

112(r)

This facility is NOT subject to the requirements of the Chemical Accident Release Prevention Program, Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above applicability thresholds.

Compliance Assurance Monitoring (CAM)

Pursuant to 40 CFR 64.2, the provisions of the Compliance Assurance Monitoring (CAM) rule are applicable to emission units that meet all the following criteria:

Criteria #1: The unit is subject to an emission limitation AND uses a control device to achieve compliance with the limit;

Criteria #2: The unit has pre-control potential emissions that are equal to or greater than 100% of the amount (in tpy) required for a source to be classified as a major source; and,

Criteria #3: The unit is not exempt under 40 CFR 64.2(b).

The following table summarizes CAM applicability at Unilin Flooring, N.V.:

Emission Unit	Criteria #1: Does the Source Use a Control Device?	Criteria #2: Pre-control PTE \geq 100% of major source thresholds?	Criteria #3: Exempt Under 40 CFR 64.2(b)?	CAM Source?
ES-MSI	Yes (PM)	No	No	No

The Mat Steam Injection System (**ID No. ES-MSI**) is controlled by cyclone (**ID No. CD-CYMSI**) and a bag filter (**ID No. CD-FFMSI**) and its potential pre-controlled PM10 emissions (96.6 tpy) is less than 100 TPY. As demonstrated above, this permit modification is NOT subject to CAM.

Prior to this TV renewal and modification (see 08803T19 review dated on May 26, 2015) CAM has been determined to apply to all sources and associated controls listed below, because of potential pre-controlled particulate matter emissions exceeding CAM thresholds. Based on the most recent inspection report, it appears that Unilin has been in compliance with this regulation. Continued compliance is expected.

Emission Source(s)	Control Device(s)	Regulation(s)
ES-HP, ES-BP, ES-DRY, ES-RFN	CD-SCRB	02D .0504, 02D .0504, 02D .0515
ES-21	CD-CY21, CD-FF21	2D .0512
ES-22	CD-CY22, CD-FF22	2D .0512
ES-23	CD-CY23A, CD-CY23B, CD-FF23	2D .0512
ES-31	CD-FF31	2D .0512
ES-32	CD-FF32	2D .0512
ES-33	CD-FF33	2D .0512
ES-34	CD-CY34, CD-FF34	2D .0512
ES-FHS	CD-CYFHS, CD-FF-23	2D .0512

9. Facility-Wide Air Toxics:

The current permit includes no NC Air Toxics requirements. This permit renewal and modification do not change this status. However, NC Air toxics conditions were applicable. The Permittee requested their removal because of the facility's MACT applicability pursuant to 15A NCAC 02Q .0702(27). An unacceptable risk analysis was performed with the issuance of permit revision T18 and it was determined that none existed. So, the permit conditions were removed. (See C. Yirka's 08803 T18 technical review, dated February 26, 2014,)

10. Facility Emission Review:

Actual emissions for 2014 through 2018 are reported in the header of this permit review.

As noted above (Section 7), the minor modification is expected to increase emissions of PM₁₀ by 0.011 pounds per hour potential.

11. Facility Comments on Drafts Review

- **Email from Mr. Dale Overcash on February 16, 2021:**

Requested revised language for Permit Condition 2.1 B.3.d to

Once a day during bypass operation of the Biofilter (**ID No. CD-BIO**), as allowed within the routine control device maintenance exemption within 40 CFR 63.2551 and Section 2.2 B.2.e. and f. of this permit, the Permittee shall observe the emission points of these sources (**ID Nos. ES-DRY, ES-BP, and ES-RFN**), which are not being controlled by the aqueous-assisted fiber removal chamber (**ID No. CD-SCRB**) and Biofilter (**ID No. CD-BIO**), at the stack (EP-Bio) for any visible emissions above normal. The daily observation must be made for each day of bypass operation of the calendar year period to ensure compliance with this requirement. The Permittee shall be allowed three (3) days of absent observations per semi-annual period. If visible emissions from this source is observed to be above normal, the Permittee shall either....

Response:

The Department has accepted above permit condition language revision.

- **Email from Mr. Dale Overcash on March 1, 2021:**

We, however, noticed that the PCWP MACT rule requires testing within 2 years of the previous source test. Other MACT rules have similar testing requirements (for instance, Boiler MACT has recurring 1 year and 3 year testing) and the testing in such cases was clarified to say that the testing must be completed within 13 and 37 months of the

previous test for that rule. Can DAQ add such clarification to the Unilin permit to say the PCWP MACT biofilter testing must occur within 25 months of the previous testing? Otherwise, the testing will always occur in less than 24 months (probably ~ 23 months) such that there would be no permit and NESHAP violation. Such sequential testing would keep advancing the testing forward as years pass by. We have added a comment beside of the testing condition that references this email and the logic above.

Comment on the draft permit - Permit condition 2.2 B.2.m (Page no.26)

Testing [15A NCAC 02Q .0508(f)]

1. Emissions testing of the inlet and outlet of the biofilter (**ID No. CD-BIO**) for one or multiple pollutants as listed in Section 2.2 B.2.d above is required and the site-specific operating parameters as per Section 2.2 B.2.k above, shall be monitored for the temperature range established during testing in order to demonstrate continuous compliance. The results of the emissions test shall be reported in units of pounds per hour.

Testing was completed on June 23-24, 2020 utilizing UF resins. Repeat performance testing shall be required biennially (within 25 months of the previous test date)[[DO1](#)] and within 180 days after each replacement of any portion of the biofilter bed media with a different type of media or each replacement of more than 50 percent (by volume) of the biofilter bed media with the same type of media. The Permittee shall submit a written report of the test results to the Regional Supervisor, DAQ within 60 days of the completion of the test. Thereafter a biennial test (within 24 months of the previous test date) shall be required. If the results of this test are above the limit given in Section 2.2 B.2.d above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111. Testing shall be conducted under representative operating conditions of at least 90% of the full production rate (ODT) and as defined in 40 CFR 63.2292. The testing shall be performed in accordance General Condition JJ.

[DO1](#) See comments in email regarding the testing – Email to U. Patel dated 3/1/21. Unilin requests within 25 months if DAQ agrees with our logic and is allowed.

Response:

The permitting section forwarded this question to the SSCB for response. Their response follows: *Although the request seems reasonable given that there are some EPA rules where such time windows are written explicitly into the rules, this is a request we cannot grant at this time. For continuous or continually operated sources and facilities under this subpart, EPA would probably consider it a relaxation of testing requirements and beyond our authority as specified in 40 CFR 63.2291(c)(3).*

EPA last modified this rule on August 13, 2020. It seems the testing is meant to be conducted within 24 months of the previous testing. EPA had the option of making the sort of change that is being requested. They did not. NC DAQ has been taking the position that two years means 24 months. We have not (recently) been taking it to the date (e.g., if you tested on September 24, 2019 you must test by September 24, 2021. Rather, from a compliance perspective, we view it as you have to test anytime before the end of September 2021).

Based on our interpretation, the requirement should remain 24 months to meet the two-year requirement.

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

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. South Carolina and Mecklenburg County Air Quality are affected programs within 50 miles of the facility.

13. Other Regulatory Considerations:

- A Permit Application fee was submitted for both Permit Application Nos. 6200061.19B and 6200061.20C.
- A P.E. Seal is NOT required for Permit Application No. 6200061.19B.
- A P.E. Seal is required for Permit Application No. 6200061.20C and was submitted for this application.
- A 30-day public notice and 45-day EPA review is required for Permit Application No. 6200061.19B.
- A 30-day public notice and 45-day EPA review is NOT required for Permit Application No. 6200061.20C.
- A Zoning Determination is NOT required for Permit Application No. 6200061.19B.
- A Zoning Determination is required for Permit Application No. 6200061.20C and was submitted for this application.

14. Recommendations/Conclusion:

TBD

Attachment A

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: July 11, 2019

Region: Fayetteville Regional Office County: Montgomery NC Facility ID: 6200061 Inspector's Name: Jeffrey D. Cole Date of Last Inspection: 12/12/2018 Compliance Code: 3 / Compliance - inspection

Facility Data				Permit Applicability (this application only)			
Applicant (Facility's Name): Unilin Flooring, N.V. Facility Address: Unilin Flooring, N.V. 149 Homanit USA Road Mount Gilead, NC 27306 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: 02D .0501, 02D .0504, 02D .0512, 02D .0515, 02D .0516, 02D .0521, 02D .0530, 02D .1111, 02Q. 0512 NSPS: N/A NESHAP: Subpart DDDD, QQQQ, ZZZZ PSD: 02D .0530 PSD Avoidance: N/A NC Toxics: N/A 112(r): N/A Other: N/A			
Contact Data				Application Data			
Facility Contact		Authorized Contact		Technical Contact		Application Number: 6200061.19A Date Received: 04/05/2019 Application Type: Modification Application Schedule: TV-Sign-501(b)(2) Part I Existing Permit Data Existing Permit Number: 08803/T21 Existing Permit Issue Date: 10/10/2017 Existing Permit Expiration Date: 04/30/2020	
Chris Robillard Safety Manager (910) 439-6959 149 Homanit USA Road Mt. Gilead, NC 27306		Ric Aikman General Manager (910) 439-6559 149 Homanit USA Road Mt. Gilead, NC 27306		Chris Robillard Safety Manager (910) 439-6959 149 Homanit USA Road Mt. Gilead, NC 27306			
Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2017	9.90	137.02	712.53	127.21	116.86	117.28	87.61 [Methanol (methyl alcohol)]
2016	12.01	135.03	778.70	127.66	126.25	125.73	96.43 [Methanol (methyl alcohol)]
2015	12.76	135.51	700.74	127.89	111.78	178.53	97.86 [Methanol (methyl alcohol)]
2014	11.68	132.87	734.53	125.40	113.97	205.59	108.12 [Methanol (methyl alcohol)]
2013	10.32	130.64	749.02	123.24	90.82	257.47	133.63 [Formaldehyde]
Review Engineer: Urva Patel Review Engineer's Signature: _____ Date: 07/11/2019					Comments / Recommendations: Issue: 08803/T22 Permit Issue Date: July 11, 2019 Permit Expiration Date: April 30, 2020		

1. Purpose of Application:

Currently, Unilin Flooring, N.V. holds Title V Permit No. 08803T22 with an expiration date of April 30, 2020 for a thin-high density fiberboard (THDF) plant in Mt. Gilead, Montgomery County, North Carolina. This Title V-Significant Modification-501(b)(2) Part I permit application (Application No. 6200061.19A) was received on April 5, 2019 for the use of urea formaldehyde (UF) resin in the production areas and to install a biofilter.

The company desires the capability to manufacture THDF with either methyl diphenyl di-isocyanate (MDI) resin or UF resin. The company must operate the biofilter to demonstrate compliance while manufacturing UF resins. A new MACT condition will be added for UF resin THDF manufacturing.

The facility does not need to operate the biofilter to comply with the current MACT requirements for MDI resin based THDF manufacturing (as listed in Permit No. 08803T22). The biofilter will be permitted as a voluntary control device when utilizing MDI resins. The facility most likely will operate the biofilter at all times but desires the flexibility to demonstrate compliance for MDI resins with either the existing or new MACT condition.

2. Facility Description:

Unilin Flooring N.V. owns and operates a THDF plant (SIC 2493) that is located in Mt. Gilead, Montgomery County, NC. The current facility has a design capacity of approximately 800 tons of THDF per day. The facility uses pine shavings and chips as the main raw materials. The chips are refined, mixed with resin, and dried in the flash tube dryer. After being dried to approximately 10% moisture, the fibers are sent to the press to be formed into boards. After the boards are formed, they are cooled, sawed, trimmed and sanded to product specifications. Some boards are coated on the coating line as a final manufacturing step. The plant also has a heating plant, which supplies direct heat to the dryer and indirectly heats hot oil for use in the press.

3. Application Chronology:

Application Chronology

April 5, 2019 Received application as a Title V Significant Modification 501(b)(2) Part I (6200061.19A).
 April 5, 2019 Sent acknowledgement letter indicating that the application (6200061.19A) for permit modification was incomplete due to missing the zoning consistency determination.
 April 19, 2019 Received Zoning Consistency Determination.

4. Summary of Changes to the Existing Permit (Permit No. 08803T21):

Page No.	Section	Description of Changes
Cover Letter	N/A	<ul style="list-style-type: none"> Updated cover letter with application number, permit numbers, dates, fee class, PSD increment statement, and Director name.
Permit Cover	N/A	<ul style="list-style-type: none"> Inserted new issuance and complete application date, application number, facility information.
3, 7, 10, 36	Section 1 2.1 A 2.1 B 2.3	<ul style="list-style-type: none"> Addition of Biofilter (ID No. CD-BIO)
7, 10	2.1 A.4	<ul style="list-style-type: none"> Added new condition 02D .0530(u) for a new Biofilter (ID No. CD-BIO)
25	2.2 B.1	<ul style="list-style-type: none"> Revised the MACT permit condition for the use of MDI
29	2.2 B.2	<ul style="list-style-type: none"> Added the MACT permit condition for the use of UF with Biofilter
36	2.3 C	<ul style="list-style-type: none"> Added Permit Shield condition for Biofilter (ID No. CDE-BIO)

5. Compliance Status:

DAQ has reviewed the compliance status of this facility. During the most recent inspection conducted on December 18, 2018, Jeffrey D. Cole of the Fayetteville Regional Office indicated that the facility appeared to be in compliance with all applicable requirements. Additionally, a signed Title V Compliance Certification (Form E5) indicating that the facility was in compliance with all applicable requirements was submitted with Application No. 6200061.19A on April 5, 2019.

Five-year Compliance History:

- The facility was inspected on December 18, 2018 and appeared to be in compliance with all applicable air quality regulations.
- The facility was inspected on November 11, 2017 and appeared to be in compliance with all applicable air quality regulations.
- On May 8, 2017, a Notice of Violation (NOV) was issued for being in non-compliance with applicable requirements of 40 CFR 63, Subpart JJ and non-compliance with applicable requirements of 40 CFR 63, Subpart QQQQ. This was resolved on May 24, 2017.
- On June 10, 2014, an NOV was issued for failure to convert to 100% MDI and achieve full compliance with the MACT (40 CFR 63, Subpart DDDD). This NOV initiated a Special Order by Consent (SOC) that was resolved on July 28, 2016.

6. New/Modified Equipment/Changes in Emissions:

From plant startup in 2001 until 2012 the facility utilized urea formaldehyde (UF) based resins and operated a wet scrubber and a regenerative thermal oxidizer (RTO). In 2012, Unilin went through PSD and permitted the use of methyl diphenyl di-isocyanate (MDI) resins without the use of the RTO but still operated the wet scrubber.

Based on customer demand for THDF made with UF resin, Unilin is requesting to re-permit the facility to use UF resins and is proposing to install a biofilter to control formaldehyde and potentially methanol from the process.

The facility is also requesting a 10% increase of the short-term production rates and an annual rate of 266,500 oven dried tons (ODT) per year.

The facility has ample heating plant capacity to accommodate the short-term increase in production. There are no planned changes to the heating plant. The short-term manufacturing increases are reflected in the dryer through all emission sources to the end of the manufacturing line. As indicated above, the projected actual emissions are based on 266,500 ODT per year.

Unilin is requesting to have two permit conditions to comply with the PCWP-MACT. One condition is specifically for MDI resin utilization and second condition is for the new biofilter operation when utilizing UF resins.

The site intends to operate the biofilter when utilizing both UF and MDI resins. However, due to the low formaldehyde inlet load to the biofilter when utilizing MDI resins, the above referenced second permit condition may or may not be a compliance option when utilizing MDI resins.

As per this permit application, the biofilter manufacturer has indicated that there will be no particulate control in the biofilter.

Per application submittal for this permit modification, the following changes were requested (see Form A1, A2 for more details):

Equipment to be ADDED: n/a

Equipment to be MODIFIED:

<i>Emission Source ID NO.</i>	<i>Emission Source Description</i>	<i>Control Device ID NO.</i>	<i>Control Device Description</i>
ES-HP MACT DDDD	Heating Plant (Oil, Wood)	CD-01 CD-SCRB CD-BIO	Multi Cyclone Wet Scrubber Biofilter

Equipment to be REMOVED: n/a

Changes in Emissions

According to application 6200016.19A, use of UF resins with MDI resins and adding the Biofilter (CD-BIO) would represent a change in the method of operation as well as be a physical change. As such, the emissions resulting from the

modification were reviewed to determine if the project would be considered a major modification under Prevention of Significant Deterioration (PSD) rules.

Per the application, the facility has calculated baseline actual emissions for April 2015 through March 2017 for all pollutants. The facility calculated emissions for April 2015 – December 2015 based on the actual usage of UF and MDI. All of 2016 and January 2017 – March 2017 was based on using MDI resin. The average annual production for this period was 245,217 ODT/year.

The projected actual emissions (PAE) were estimated at 266,500 ODT/year and 8760 hours of operation at the Heating Plant. The heating plant emission factors for particulates used are from the outlet of the scrubber tested in 2014. CO and NOx (from 2002, 2003) are both assumed to be uncontrolled. For the heating plant, formaldehyde and methanol emission factors were taken from 2011 UF resin testing with no control. Unilin applied a control efficiency of 90% for the new biofilter for formaldehyde. However, for this analysis, the control efficiency for VOC and methanol were assumed to be zero. The other sources at the facility are based on the same heating plant production in ODT/yr, while others are based on equivalent million square feet (MSF) of board. For the units where emissions are based on MSF, Unilin used a 10% short-term (hourly) potential throughput increase. For particulate emissions from these sources, the facility developed an increase factor of the projected ODT production (266,500 ODT) divided by the 2016 ODT production (260,515 ODT/yr) and increased the PM emissions accordingly.

The “Could have accommodated” emissions were based on 277,741.27 ODT/year and 8364 hours of operation at the heating plant. These emissions were established by determining an incremental annual production rate over the baseline production rate occurring within the 24-month period used to establish the BAE. The facility tracks periods of production through the year, but such tracking is not on a 30- or 31-day basis, but instead on a 28 day or up to 38-day basis. It was determined that the most environmentally conservative approach (the approach with the lowest production number) was to use the daily production and multiply by 365 days to obtain the annual production rate during the baseline period. The annual production rate occurring during the baseline period was 277,741 ODT. Therefore, “could have accommodated” emissions were calculated based on the incremental production rate over the baseline production rate that the unit “could have accommodated” calculated as follows:

Could have accommodated Emissions = Emissions based on production rate of 277,741 ODT – Baseline emissions from April 2015 – March 2017 (245, 217 ODT)

The facility has evaluated the actual emissions per the summary above. It can be seen in the table below, that the emission increases associated with this modification are less than the Significant Emission Rate (SER) for all PSD pollutants and a PSD review is not required. However, a permit condition for 02D .0530(u) will be added to the permit under this modification. The condition will require five years of tracking for the PAE which are noted in the emission summary.

PSD Applicability Summary

	Projected Actuals	Could Have Accommodated	Adjusted Projected Actual Emissions	Baseline Actual Emissions	Emissions Increase	Significant Emission Rate	Trigger PSD? (Yes/No)
Pollutant	TPY	TPY	TPY	TPY	TPY	TPY	
SO ₂	35.2	--	--	--	--	40	No
NO _x	168.2	0.3	167.8	134.9	32.93	40	No
PM	135.80	14.58	121.22	119.81	1.41	25	No
PM ₁₀	135.71	14.57	121.14	119.75	1.39	15	No
PM _{2.5}	135.64	14.56	121.08	119.70	1.38	10	No
VOCs	792.7	107.2	685.5	723.1	-37.65	40	No
CO	151.1	0.4	150.7	127.4	23.37	100	No
Lead	4.55E-03	--	--	--	--	0.6	No
Projected Actuals - Could Have Accommodated = Adjusted Projected Actuals							
Adjusted Projected Actuals - Baseline Actual Emissions = Emissions Increase							

As indicated above, the facility has performed the PSD applicability determination for these pollutants by providing baseline actual emissions (BAE) to projected actual emissions (PAE). For all pollutants, the PAE were below the PSD significant emission rate (SER). Therefore, PSD permitting is not required for this proposed modification of UF resin use and the addition of a biofilter (ID No. CD-BIO).

Net Emission Summary Table indicates PM, NO_x, Lead, SO₂, CO and VOC are still below the Significant Emission Rate (SER) threshold.

Heating Plant:

Net Increase of NO_x:

$$167.8 \text{ TPY} - 134.9 \text{ TPY} = 32.93 \text{ TPY}$$

$$\text{An increase of NO}_x = 32.93 \text{ (tons/year)} \times 2000 \text{ (lbs/ton)} \div 8760 \text{ (hours/year)} = 7.52 \text{ lb/hr}$$

Net Increase of PM₁₀:

$$121.14 \text{ TPY} - 119.75 \text{ TPY} = 1.39 \text{ TPY}$$

$$\text{An increase of PM}_{10} = 1.39 \text{ (tons/year)} \times 2000 \text{ (lbs/ton)} \div 8760 \text{ (hours/year)} = 0.32 \text{ lb/hr}$$

Net Increase of CO:

$$150.7 \text{ TPY} - 127.4 \text{ TPY} = 23.37 \text{ TPY}$$

$$\text{An increase of CO} = 23.37 \text{ (tons/year)} \times 2000 \text{ (lbs/ton)} \div 8760 \text{ (hours/year)} = 5.33 \text{ lb/hr}$$

Per Form D1 – Facility-Wide Emissions Summary (Projected Actual Emissions)

Pollutant	Potential Emissions – Form D1 (After controls / Limitations)
	Tons per year (tpy)
Particulate Matter (PM)	135.80
PM<10 μm (PM ₁₀)	135.71

Pollutant	Potential Emissions – Form D1 (After controls / Limitations)
	Tons per year (tpy)
PM<2.5 µm (PM _{2.5})	135.64
Sulfur dioxide (SO ₂)	35.20
Nitrogen oxides (NO _x)	168.19
Carbon monoxide (CO)	151.10
Volatile Organic Compounds (VOC)	792.68
Lead	0.0046
Hazardous Air Pollutants (HAP)	
Largest Individual HAP (Methanol)	146.31
Formaldehyde	16.46
Acetaldehyde	6.57
Acrolein	2.24
Phenol	3.82
Propionaldehyde	1.76

7. Regulatory Review

Unless specifically noted, a detailed discussion of the following list of equipment and all associated permit conditions is not included as applicability status has not changed. The facility is expected to be in continued compliance.

- 15A NCAC 02D .0501 “Compliance with Emission Control Standards”
- 15A NCAC 02D .0504 “Particulates from Wood Burning Indirect Heat Exchangers”
- 15A NCAC 02D .0512 “Particulates from Miscellaneous Wood Products finishing Plants”
- 15A NCAC 02D .0515 “Particulates from Miscellaneous Industrial Processes”
- 15A NCAC 02D .0516 “Sulfur Dioxide Emissions from Combustion Sources”
- 15A NCAC 02D .0521 “Control of Visible Emissions”
- 15A NCAC 02D .0530 “Prevention of Significant Deterioration” (VOC)
- 15A NCAC 02D .0614 “Compliance Assurance Monitoring”
- 15A NCAC 02D .1111 “Maximum Achievable Control Technology (40 CFR 63, Subpart DDDD)”
- 15A NCAC 02D .1111 “Maximum Achievable Control Technology (40 CFR 63, Subpart QQQQ)”
- 15A NCAC 02D .1111 “Maximum Achievable Control Technology (40 CFR 63, Subpart ZZZZ)”

8. NSPS, NESHAP/MACT, NSR/PSD, 112(r), CAM

NSPS

This facility is NOT subject to New Source Performance Standards (NSPS), 40 CFR 60. This permit modification does not change this status.

NESHAP/MACT

This facility is a major source for HAPs emissions and is subject to the National Emission Standards for Hazardous Air Pollutants, 40 CFR 63; however, this permit modification does not affect this status. The facility is expected to be in continued compliance.

This facility is subject to 40 CFR 63, Subpart DDDD, Subpart QQQQ and Subpart ZZZZ.

NSR/PSD

The facility is a major source under the Federal Prevention of Significant Deterioration (PSD) program. The potential emissions of VOCs are greater than 250 tons per year. This facility is located in Montgomery County which is considered an attainment area.

This proposed modification was evaluated for PSD applicability and the emissions of some pollutants were found to be greater than the major source significance levels. However, Unilin elected to utilize the actual to projected actual applicability test for permitting this modification in accordance with 40 CFR 51.166(a)(7)(iv)(c) and 15A NCAC 02D

.0530(u). In this analysis, the facility used baseline emissions, projected actual emissions and could have accommodated emissions. As a result, the proposed modification will not trigger a PSD review as there will be no significant emission increases of any pollutants.

Increment

PSD increment tracking for PSD Class II purposes is required as part of this minor modification due to an increase in PM/PM₁₀/PM_{2.5} emissions of 0.32 lb/hr pounds per hour (lbs/hr), NO_x emissions of 7.52 lb/hr pounds per hour (lbs/hr). (Please refer to Section 6 above under “change in emissions” for more information).

112(r)

This facility is NOT subject to the requirements of the Chemical Accident Release Prevention Program, Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above applicability thresholds.

Compliance Assurance Monitoring (CAM)

Pursuant to 40 CFR 64.2, the provisions of the Compliance Assurance Monitoring (CAM) rule are applicable to emission units that meet all of the following criteria:

- Criteria #1: The unit is subject to an emission limitation AND uses a control device to achieve compliance with the limit;
- Criteria #2: The unit has pre-control potential emissions that are equal to or greater than 100% of the amount (in tpy) required for a source to be classified as a major source (i.e., 100 tpy of any criteria pollutant or 10 tpy of any HAP, North Carolina); and,
- Criteria #3: The unit is not exempt under 40 CFR 64.2(b).

The following table summarizes CAM applicability at Unilin Flooring, N.V.:

Emission Unit	Criteria #1: Does the Source Use a Control Device?	Criteria #2: Pre-control PTE ≥100% of major source thresholds?	Criteria #3: Exempt Under 40 CFR 64.2(b)?	CAM Source?
CD-BIO	Yes	Yes	Yes	No

Even though, the new biofilter (**ID No. CD-BIO**) installed for compliance with the MACT, it is **NOT** subject to CAM as it is exempt under 40 CFR 64.2 (b).

40 CFR 64.2(b) - Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act. This facility is subject to 40 CFR Subpart DDDD “Plywood and Composite Wood Products”, promulgated in July 30, 2004, which has limitations for hazardous air pollutants.

9. Facility-Wide Air Toxics:

A facility wide dispersion modeling analysis was received by the DAQ on April 29, 2013 for this facility. The modeling demonstration was performed to establish maximum operational flexibility for continued operation under the previous permits with emission rates for urea formaldehyde (UF) and methyl diphenyl di-isocyanate (MDI) based resins limited to 35 lbs/hr. For future operation after MACT compliance language was incorporated into the permit, the formaldehyde emissions would be limited to 33 lbs/hour exclusively for the usage of MDI based resins only. Along with the processes described above, the facility also added a second direct-fired natural gas evaporator (to evaporate wastewater) which also emitted a toxic air pollutant (formaldehyde from natural gas firing). The revised 2013 TAP modeling demonstration, which included the new evaporator, adequately demonstrated compliance on a facility-wide base in relation to the AAL.

The following table was taken from the 2013 modeling analysis:

Table 1-1. Maximum impacts for the UF resins at the Unilin Flooring facility located in Mt. Gilead, N.C.

TAP	Maximum Impact ($\mu\text{g}/\text{m}^3$)	AAL ($\mu\text{g}/\text{m}^3$)	Percent of AAL
Acrolein	3.31	80	4.1 %
Formaldehyde	148.98	150	99.3 %
Phenol	6.12	950	< 1 %

Table 1-2. Maximum impacts for the MDI resins at the Unilin Flooring facility located in Mt. Gilead, N.C.

TAP	Maximum Impact ($\mu\text{g}/\text{m}^3$)	AAL ($\mu\text{g}/\text{m}^3$)	Percent of AAL
Acrolein	3.59	80	4.5%
Formaldehyde	142.36	150	94.9%
Phenol	6.77	950	< 1 %

As stated earlier in this review, the 2013 facility wide TAP modeling demonstration, which included the new evaporator, adequately demonstrated compliance on a facility-wide base in relation to the AAL. The proposed scenario will be to re-permit the usage of both MDI and UF in the manufacture THDF due to customer demand for THDF made with UF resin. However, this time the facility is proposing to install a biofilter to control formaldehyde and potentially methanol from the process. The biofilter operates in thermophilic temperature range. At this temperature, the biofilter will remove formaldehyde at a 90% efficiency. Therefore, because the formaldehyde emissions will be substantially lower than the previous modeling which demonstrated compliance, the DAQ believes that this modification will not cause an unsafe health risk to the general public.

10. Facility Emission Review:

Actual emissions for 2013 through 2017 are reported in the header of this permit review.

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

Public notice and EPA review periods are not required for this modification.

12. Other Regulatory Considerations:

- A Permit Application fee is required for Permit Application No. 6200061.19A.
- A P.E. Seal is NOT required for Permit Application No. 6200061.19A.
- A 30-day public notice and 45-day EPA review is NOT required for Permit Application No. 6200061.19A.
- A Zoning Determination is required for Permit Application No. 6200061.19A.

13. Recommendations/Conclusion:

DAQ recommends the issuance of Air Permit No. 08803T22 to Unilin Flooring, N.V.