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BUREAU OF AIR REGULATION

Jeff Koerner
Florida Department of Environmental Protection
Bureau of Air Regulation
New Source Review
Bob Martinez Building, MS #5500
Tallahassee, FL 32399-2400.

July 28, 2009

Dear Mr. Jeff Koerner

North Florida Lumber was informed by the FDEP to submit additional information for the PSD Construction Permit. The following information regarding the modification of lumber drying Kiln 2 is provided in support of the PSD Construction Permit Application for North Florida Lumber, Inc Facility I.D. 0770007, Bristol Liberty County. If you have any question please feel free to contact me at 850-643-2238 ext. 101

Thank You

A handwritten signature in black ink, appearing to read "Kenny E. Sparks".

Kenny E. Sparks
General Manager

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North Florida Lumber, Inc.
Project No. 0770007-014-AC (PSD-FL-407)
Kiln 2 Modification Project
July 24, 2009

The following information regarding the modification of lumber drying Kiln 2 is provided in support of the PSD Construction Permit Application for North Florida Lumber, Inc., Facility I.D 0770007, Bristol, Liberty County.

Kiln 1, 3 and 4 Operation (EU-015)

1. There will be no physical modifications or changes in work practices at existing Kilns 1, 3 and 4. Kiln 1 will continue as a lumber drying kiln, and Kilns 3 and 4 will continue as utility pole drying kilns at the authorized maximum rate of 1,500,000 cubic feet per year.

North Florida Lumber, Inc. (NFL) concurs with withdrawal of the request to increase pole drying capacity to 1,500,000 cubic feet of poles for Kilns 3 and 4. Renewed Title V Permit No. 0770007-012-AV currently identifies this as the capacity for Kilns 3 and 4.

Kiln 2 Emissions

2. Air Flow Inside Kiln 2.

Air inside Kiln 2 will be heated by steam coils and re-circulated inside the central drying chamber of the kiln by nine (9) reversible 25-hp fans. Air circulation inside the pre- and post-conditioning chambers of Kiln 2 will be provided by seven (7) reversible 25-hp fans inside each chamber, for a total of twenty-three (23) fans inside the entire kiln.

Make-up air preheated by flash steam will be blown into the central drying chamber of Kiln 2, placing the central chamber under slight positive pressure. The positive pressure maintained in the central chamber will drive spent, water vapor and VOC-laden air out the pre- and post-conditioning chambers of the kiln via the open doorways at each end of the kiln.

3. Locations of Steam Coils in Kiln 2.

Three (3) banks of steam coils are located inside the central drying chamber of Kiln 2. The first is a vertical bank running the length of the central axis of the kiln, between the two tracks. One inclined bank of coils is suspended from each ceiling of the peaked roof. Each three steam coil bank is 80 feet long, the length of the central drying chamber of Kiln 2.

4. Kiln 2 Openings.

Kiln 2 will have two openings at each end. Each opening will measure 15.5 feet high by 12.0 feet wide. The existing roof vents on the central chamber of the modified kiln will be permanently closed. Modified Kiln 2 will have a similar appearance to a double-track railroad tunnel.

5. Kiln 2 Emissions

Only Kiln 2 is being physically modified. Therefore, only the emissions from Kiln 2 will be evaluated.

6. Baseline Actual Emissions

Since Kiln 2 did not begin operation until February of 2005, calendar years 2005/2006 will be used as the 2-year period for determining baseline actual emissions. Baseline actual VOC and HAP emissions for Kiln 2 are presented in Table No. 1. The 2005-2006 pro-rated average annual throughput at Kiln 2 was 52,204,724.5 bd-ft.

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7. Projected Actual Emissions
Projected Actual VOC and HAP Emissions for Kiln 2 based on the new capacity of 92,000,000 board-feet/year are presented in Table No. 1.
8. Kiln 2 VOC Emission Factors
Based on recommendations from the Department's NWD office and EPA Region 4, the VOC emissions factor for Kiln 2 from *NCASI Bulletin 845 for Steam-Heated Kilns* will be 5.36 lb VOC/1000 bd-ft., expressed as propane. This factor was used to calculate baseline actual and projected actual VOC emissions presented in Table No. 1 in this submittal.
9. Kiln 2 Expansion VOC Increase
The expected VOC and HAP emissions increase resulting from the Kiln 2 expansion project is presented in Table No. 1.

Boilers 1, 2 and 3 (EU-001 and EU-002)

- 10 -12. Baseline and Projected Actual Emissions – Boilers 1, 2 & 3.
Since Boilers 1, 2 and 3 provide steam to all four kilns, total baseline actual and projected actual emissions from all three boilers are presented in Table No. 2, using 2005-2006 as the two-year baseline actual emissions period. The fuel use in the supporting calculations for Boilers 1, 2 and 3 presented in Table 2 are an annual average of 61,778.32 tons for the period 2005-2006, and a projected actual annual of 73,876 tons.
13. Boiler 2 Emissions
Boiler 2 is subject to the Department's carbonaceous fuel fired equipment regulation at FAC 62-296.410. For PM emissions from Boiler 2, Rule 62-210.370, F.A.C. requires the use of the average of the stack test data conducted during a 5-year period encompassing the 2005/2006 baseline period. The average results of Boiler 2 emissions tests over a 5-year period were used to derive an average emission factor of 0.159 lb PM/MMBTU to calculate both the baseline actual projected actual emissions. At Boiler 2 PM is assumed to be PM₁₀.
14. Boiler Emissions Increase from Kiln 2 Expansion
CO, NO_x, PM, PM₁₀, SO₂, and VOC emission increases from Boilers 1, 2 and 3 resulting from the Kiln 2 expansion project are presented in Table No. 2.

Wood Handling and Storage Operations (EU-014)

15. Wood Handling Baseline Actual Emissions – Kiln 2
Baseline Actual PM/PM₁₀ emissions at the Wood Waste Handling System (EU 014) attributable to finished lumber dried at Kiln 2 are presented in table No. 3. Table No. 3 was compiled using calendar 2005-2006 annual operating data pro-rated for the activity level at Kiln 2. The pro-rata factor used for the 2005-2006 Baseline Period is 0.5185, the ratio of the annual average quantity of lumber dried at Kiln 2, 52,204,725 bd-ft., divided by the facility-wide total of 100,685,916 bd-ft.

The cyclones were operated an average of 2307.6 operating hours per year during the 2005-2006 Baseline Period, except for Cyclones 8 and 9 at the Planer Mill, which cannot be operated simultaneously. For this reason, Cyclones 8 and 9 were pro-rated at a 50/50 ratio for 2307.6 total cyclone operating years for the 2005-2006 Baseline period.

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16. Wood Handling Projected Actual Emissions – Kiln 2

Similarly, Projected Actual PM/PM₁₀ annual emissions from the Wood Waste Handling System attributable to activity at Kiln 2 are presented in Table No. 3. Projected Actual emissions in Table No. 3 were pro-rated for Kiln 2, using a pro-rata factor of 0.58228, the ratio of projected maximum lumber drying at Kiln 2, 92,000,000 bd-ft, divided by the facility-wide total of 158,000,000 bd-ft. Maximum expected operating hours for the Wood Waste Handling System cyclones in Table No. 3 are 3160 operating hours per year.

17. Sawmill PM/PM₁₀ Control Measures

Bark from the LL1 debarker is chuted directly to a conveyor and can be diverted either to the truck bin or to the bark hog and then to the high pressure system to the high pressure cyclone on silo 1. Bark from debarker LL2 goes directly by conveyor to the bark truck bin. After logs are de-barked, the wet bark is transferred by belt conveyor to short-term storage bins and then transported from the plant by truck. Typically, three to four trucks per day empty the bark storage bins. There is no open storage of bark.

- Sawmill operations occur inside the sawmill building. The sawdust along with any fines from the chipping system travels by belt conveyor and goes either to the high pressure system and to the high pressure cyclone on silo 1, or directly to the sawdust truck bin by belt conveyor. There is a diverter in this high pressure line to divert sawdust to silo 3, but it is never used, since silo 3 is used for planer shavings.
- All log sawing is conducted with a wet mist to cool the saw blades, minimizing fugitive dust emissions. Since the sawdust generated is wet, this also minimizes the amount of PM/PM₁₀ emissions when sawdust is being handled and moved by belt and pneumatic conveyors.

The planing operation is conducted inside the planer mill building. Planer mill shavings generated by the planer and the trim waste are collected by a negative pressure cyclone, then dropped through an airlock into a high pressure system, which can be directed to either of two high pressure cyclones #8 and #9. Therefore, cyclones 8 and 9 cannot be operated simultaneously. One cyclone is on top of the shavings truck bin and the other is on silo #3. Planer mill waste can go in only one direction at a time; therefore, only one of these cyclones can be in service at any one time.

- All dried lumber is stored in covered storage sheds.
- Nearly all conveyors are enclosed. Some bark conveyors are open; however, this material is generally saturated with moisture and sap.
- All feed systems delivering wood waste to the fuel storage silos are controlled by cyclones.
- Chipping operations: There is only one chipper at the sawmill. Chips from all chipping operations travel by conveyor to the chip screen. From the chip screen the oversize chips return to the chipper, undersize chips from the chip screen go to the truck bin by belt conveyor, and the fines from the chip screen go into the sawdust conveyor.

Although a vibrating screen is used to size the wood chips, fines are controlled with a cyclone, and only large chips are dumped to the truck load-outs for shipment to pulp mills. There is only one cyclone and one chipper for the chipping operation, with the majority of the chipping done by the chipping heads in the enclosed area at the saws.

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18. PM and PM₁₀ emissions from Wood Waste Handling

Estimated PM and PM₁₀ emissions from the following activities attributable to Kiln 2 are presented in Table No. 3: There have been a total of nine (9) cyclones at NFL of which three have been taken out of service, leaving six (6) active cyclones. Each cyclone number and its corresponding location, with 2005/2006 Baseline Actual and Projected Actual PM and PM₁₀ emissions, pro-rated for activity at Kiln 2 only, appears in Table No. 3. Because planer mill cyclones 8 and 9 cannot be operated simultaneously, their respective emissions were pro-rated on a 50/50 basis for each emissions unit in Table no. 3.

- Truck load-out facilities and associated PM/PM₁₀ emissions:

PM/PM₁₀ emissions from truck bark, chip, planer shavings and sawdust loadout occur at trapezoidal overhead storage bins positioned to drop-feed into trucks with minimal material drop to minimize product spillage.

The bark and sawdust are saturated with sap and water from the saws. The wood chips are damp, i.e. "green" and additionally, have had the fines screened out of them prior to conveying to the wood chip bin. The only identifiable dusty material loaded is dry planer shavings. Shavings are loaded into trucks from a bin identical to those used to load sawdust, bark and chips. Fugitive wood particulates are generated during shavings loadout. Emission of PM/PM₁₀ from shavings loadout activity is contained by sheet metal walls that surround the shavings bin.

Kiln 2 Expansion project – Emissions Increase Summary

Annual emissions increased as a result of expansion of Kiln 2 for each of the four Emissions Unit Groups, 001, 002, 014 and 015, are summarized in table No. 4. At the bottom of Table 4 is a comparison between the annual emissions increase for each pollutant with its respective PSD-significance level.

Boiler Emissions (EU 001 & 002)

Criteria Pollutant emissions from Boilers 1 and 3 (EU 001) and Boiler 2 (EU 002) would not change as a result of the expansion of lumber drying at Kiln.2. This is because fuel consumption at Boilers, 1, 2 and 3 has decreased, despite an increase in dried lumber production from 84,081,000 bd-ft. during 2002 to 105,010,732 bd-ft. during 2007. Meanwhile, historic fuel consumption has steadily decreased from 83,027 tons in 2002 to 53,482.4 tons during 2008. The reasons fuel consumption has decreased while lumber drying increased are: 1) Increased efficiency in boiler operation, and 2) Development of commercial markets for hog fuel that was formerly either burned or disposed on-site. Because boiler fuel consumption has decreased in tandem with increased lumber production, boiler emissions were excluded from consideration for the Kiln 2 expansion project.

P.E. Certification

19. The final version of this response to the Department has been certified by a Florida-registered Professional Engineer.

Professional Engineer Certification

1. Professional Engineer Name: Edward A. Harris, P.E.

Registration Number: 44503

2. Professional Engineer Mailing Address...

Organization/Firm: Ed Harris PE Services

Street Address: 798 Ridge Road

City: Heber Springs State: AR

Zip Code: 72543

3. Professional Engineer Telephone Numbers...

Telephone: (501) 206 - 0194 ext. Fax: (501) 206-0189

4. Professional Engineer Email Address: edharrispe@suddenlink.net

5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here , if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

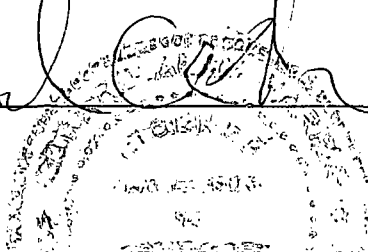
(4) If the purpose of this application is to obtain an air construction permit (check here , if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here , if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.



Signature

(seal)



7/29/09

Date

* Attach any exception to certification statement

TABLE NO. 2
NORTH FLORIDA LUMBER, INC.
FACILITY #077007 / PSD-FL-407
BOILERS 1, 2 AND 3
BASELINE / PROJECTED ACTUAL EMISSIONS
JULY 17, 2009

| | Baseline Actual Annual 2005-06 (tpy) | Projected Actual Annual (tpy) | Emissions Increase (tpy) |
|--------------------|--|-------------------------------------|--------------------------------|
| NOx | 61.161 | 73.14 | 11.98 |
| CO | 166.802 | 199.47 | 32.66 |
| VOC | 10.842 | 12.97 | 2.12 |
| SO ₂ | 7.228 | 8.64 | 1.42 |
| PM | 81.02 | 89.42 | 8.40 |
| PM ₁₀ | 75.24 | 83.67 | 8.44 |
| Ann. Avg. Fuel Use | 61,778.3 | 73,876.0 | 12,097.7 |

Boilers 1 & 3 (EU 001) calculated from AP-42 factors
Boiler 2 CO, NOx, SO₂ & VOC calculated from AP-42 factors

Boiler 2 PM/PM₁₀ calculated from average of 15 years' stack test data
At Boiler 2 assume PM = PM₁₀

TABLE NO. 3
NORTH FLORIDA LUMBER, INC.
FACILITY # 077007 / PSD-FL-407
EU 014 - WOOD WASTE HANDLING EMISSIONS
ATTRIBUTABLE TO KILN 2
JULY 20, 2009

2005-2006 Baseline Actual Emissions

| Cyclone # | Location | Rating (cfm) | Diam. (ft.) | PM lb/hr | PM tpy | PM ₁₀ lb/hr | PM ₁₀ tpy |
|-----------|------------------------------------|--------------|-------------|----------|--------|------------------------|----------------------|
| 1 | Planer - negative pressure | 44,800 | 13.5 | 1.04 | 1.196 | 0.04 | 0.048 |
| 2 | Sawdust Silo # 3 - <u>inactive</u> | 4800 | 3.5 | 0 | 0 | 0 | 0 |
| 3 | Bark Silo # 2 - high pressure | 4900 | 6.0 | 1.04 | 1.196 | 0.04 | 0.048 |
| 4 | Little Chipper - <u>removed</u> | 3661 | 4.0 | 0 | 0 | 0 | 0 |
| 5 | Big Chipper - low pressure | 4069 | 8.0 | 1.04 | 1.196 | 0.04 | 0.048 |
| 6 | Rechipper - <u>removed</u> | 3178 | 4.0 | 0 | 0 | 0 | 0 |
| 7 | Sawdust Silo # 1 - high pressure | 4800 | 6.0 | 1.04 | 1.196 | 0.04 | 0.048 |
| 8 & | Shavings Silo # 3 - high pressure | 4800 | 5.0 | 0.52 | 0.598 | 0.02 | 0.024 |
| 9 & | Shavings Truck Bin - high pressure | 4800 | 6.0 | 0.52 | 0.598 | 0.02 | 0.024 |
| Totals | | | | 5.18 | 5.982 | 0.21 | 0.239 |

2005/2006 wood waste handling system operating hours: 2307.6 hr/yr
& = Cyclones 8 and 9 cannot be operated simultaneously.

Projected Actual Emissions

| Cyclone # | Location | Rating (cfm) | Diam. (ft.) | PM lb/hr | PM tpy | PM ₁₀ lb/hr | PM ₁₀ tpy |
|-----------|------------------------------------|--------------|-------------|----------|--------|------------------------|----------------------|
| 1 | Planer - negative pressure | 44,800 | 13.5 | 1.16 | 1.840 | 0.05 | 0.074 |
| 2 | Sawdust Silo # 3 - <u>inactive</u> | 4800 | 3.5 | 0 | 0 | 0 | 0 |
| 3 | Bark Silo # 2 - high pressure | 4900 | 6.0 | 1.16 | 1.840 | 0.05 | 0.074 |
| 4 | Little Chipper - <u>removed</u> | 3661 | 4.0 | 0 | 0 | 0 | 0 |
| 5 | Big Chipper - low pressure | 4069 | 8.0 | 1.16 | 1.840 | 0.05 | 0.074 |
| 6 | Rechipper - <u>removed</u> | 3178 | 4.0 | 0 | 0 | 0 | 0 |
| 7 | Sawdust Silo # 1 - high pressure | 4800 | 6.0 | 1.16 | 1.840 | 0.05 | 0.074 |
| 8 & | Shavings Silo # 3 - high pressure | 4800 | 5.0 | 0.58 | 0.920 | 0.02 | 0.037 |
| 9 & | Shavings Truck Bin - high pressure | 4800 | 6.0 | 0.58 | 0.920 | 0.02 | 0.037 |
| Totals | | | | 5.82 | 9.200 | 0.23 | 0.368 |

Maximum projected wood waste handling system operating hours: 3160 hr/yr
PM emiss. factor: 2.0 lb PM/hr cyclone operation
PM₁₀ emiss. factor: 0.08 lb PM₁₀/hr cyclone operation
& = Cyclones 8 and 9 cannot be operated simultaneously.

TABLE NO. 3
NORTH FLORIDA LUMBER, INC.
FACILITY # 077007 / PSD-FL-407
EU 014 - WOOD WASTE HANDLING EMISSIONS
ATTRIBUTABLE TO KILN 2
JULY 20, 2009

TABLE NO. 4
NORTH FLORIDA LUMBER, INC.
FACILITY #0770007 / FILE # PSD-FL-407
KILN 2 EXPANSION PROJECT
EMISSIONS INCREASE SUMMARY
JULY 23, 2009

| E.U. # | Emissions Unit | CO tpy | NOx tpy | PM tpy | PM ₁₀ tpy | SO ₂ tpy | VOC tpy |
|-----------|------------------------------|-----------|------------|-----------|-------------------------|------------------------|------------|
| 001 | Boilers 1 and 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 002 | Boiler 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 014 | Wood Waste Handling Cyclones | 0 | 0 | 3.218 | 0.129 | 0 | 0 |
| 015 | Kiln 2 only | 0 | 0 | 0 | 0 | 0 | 106.65 |
| | TOTALS | 0 | 0 | 3.218 | 0.129 | 0 | 106.65 |
| | PSD-Significance Level (tpy) | 100 | 40 | 25 | 15 | 40 | 40 |
| | Subject to PSD ? | NO | NO | NO | NO | NO | YES |

TABLE NO. 1
NORTH FLORIDA LUMBER, INC.
FACILITY #077007 / PSD-FL-407
KILN 2 BASELINE / PROJECTED VOC EMISSIONS
JULY 23, 2009

| | Baseline Actual Annual 2005-06 (tpy) | Projected Actual Annual (tpy) | Emissions Increase (tpy) |
|--------------|--|-------------------------------------|--------------------------------|
| VOC | 139.91 | 246.56 | 106.65 |
| Methanol | 6.00 | 10.58 | 4.58 |
| Formaldehyde | 0.55 | 0.97 | 0.42 |
| Bd-ft/yr | 52,204,725 | 92,000,000 | |

NCASI Bulletin 845 emission factors for steam-heated drying kiln
Total VOC: 5.36 lb VOC/MBF as propane.
Methanol: 0.23 lb/MBF
Formaldehyde: 0.021 lb/MBF