

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0559-AOP-R9 AFIN: 33-00013

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Unilin North America, LLC - Melbourne Plant
State Highway 9 Spur
Melbourne, Arkansas 72556

3. PERMIT WRITER:

Derrick Brown

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Other Millwork (including Flooring)
NAICS Code: 321918

5. ALL SUBMITTALS:

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
4/28/2017	Modification	Revision of PM, PM ₁₀ , CO, and NO _x , emission limits for SN-05 and SN-06 using AP-42 factors rather than past stack test data.

6. REVIEWER'S NOTES:

Unilin North America, LLC-Melbourne Plant (Unilin) owns and operates a hardwood flooring manufacturing facility located at State Highway 9 Spur in Melbourne, Izard County, Arkansas 72556. This permitting action revises the PM, PM₁₀, CO, and NO_x emission limits for the wood fired boilers (SN-05 and SN-06) using AP-42 factors rather than past stack data. Also, the facility is removing the Diesel Engine Emergency Generator SN-19 from the permit. This permit action increases PM, PM₁₀, and NO_x emissions by 47.9, 47.9, and 11.1 tons per year respectively.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

Consent Administrative Order (CAO) LIS: 16.066, dated August 16, 2016, cited the facility for exceeding CO and PM permitted emission rates. The Department required a stack test within 90-days for the pollutants above.

The facility tested again for PM, NO_x, and CO, on April 4, 2017. The facility exceeded permitted emission rates for CO. There is a draft pending enforcement action for this incident.

8. PSD APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N

b) Is the facility categorized as a major source for PSD? N

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes, explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
05 & 06	HAPs	NESHAP Subpart JJJJJ
19	HAPs	NESHAP Subpart ZZZZ

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. AMBIENT AIR EVALUATIONS:

a) Reserved.

b) Non-Criteria Pollutants:

Based on Department procedures for review of non-criteria pollutants, emissions of non-criteria pollutants are below thresholds of concern.

c) H₂S Modeling: N/A

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01, 02, 03	EF from informal testing event performed at SN-03 on 8/11/2003 by Trinity & engineering judgment	01/04 Test result = 0.0016 grains/dscf PM conservatively used EF = 0.01 gr/dscf PM	<u>SN-01</u> Pneumafil Baghouse #135-448-10 Fabric Filter <u>SN-02, 03</u> Carter Day Baghouses #RFJ-376 Fabric Filters	99.9% each	Flooring Plant <u>Baghouses #1, #2, #3</u> Emissions calc based on exhaust air flow of individual baghouses @8,760 hrs/yr Rated air flow SN-01 = 17.06 ft/sec = 20,500 scfm SN-02, 03 = 20.07 ft/sec = 20,100 scfm 100% of PM is PM ₁₀ .
05/06	PM/PM ₁₀ AP-42 Chapter 1.6 Tables 1.6-1, safety factor SO ₂ -Stack Test NO _x . PM/PM ₁₀ AP-42 Chapter 1.6 Tables 1.6-2 safety Factor HAP EF from AP-42 Chapter 1.6 Tables 1.6-3 ¹ & 1.6-4 ² (9/03)	<u>lbs/hr</u> PM/PM ₁₀ : 0.756 lb/mmBtu SO ₂ : 1.0 lb/hr VOC: 0.7 lb/hr CO: 1.17 lb/mmBtu NO _x : 0.49 lb/mmBtu <u>lbs/MMBtu/hr</u> ¹ Acrolein: 4.00E-03 ² Arsenic: 2.20E-05 ¹ Benzene: 4.20E-03 ¹ Chlorine: 7.90E-04 ¹ Formaldehyde: 4.40E-03 ¹ HCl: 1.90E-02 ² Lead: 4.80E-05 ² Manganese: 1.60E-03 ¹ Dixions:	Zurn fly ash arrestor, multi-clone	80-90% 85% for PM 63% for PM ₁₀	Wood fired Boilers SN-05 – Deltak Boiler (MAIN) = 47.64 MMBtu/hr SN-06 – Keeler Boiler = 37.5 MMBtu/hr Boilers operated mutually exclusive, 1 @ a time. SN-05 @ 8,760 hrs/yr SN-06 @ 1 hr/yr Actual is about 80/20 but conservatively estimated larger Boiler SN-05 ops 100% HAPs lb/hr

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		1.70E-06 ¹ Furans: 1.90E-09 ¹ Styrene: 1.90E-03 HAPs limit 10/25 plantwide			
07	MSDS	100% Acetone 6.59 lb/gallon max	None	N/A	Equipment Cleaning Solvent
08, 09, 10, 21	Mass Balance, MSDS, usage and TLV Lookup Table	<u>Max VOC content limit Lb/gallon</u> Acetone (SN-07): 6.59 Stains (SN-08): 6.54 (SN-9, 10 & 21): 2.53 VOC limited to 85 tpy & <u>Max HAP content limit Lb/gallon</u> Stains (SN-08): 5.992 Sealers (SN-9): 0.54 Topcoats & Fillers (SN-10 & 21): 0.30	None	N/A	<u>VOC & HAP-containing Materials in Finishing Dept.</u> Assumes 100% of VOCs & HAPs emitted Facility can only use either water or solvent based stain at a time HAPs limit 10/25 plantwide
11	AP-42 Tables 1.4-1 & -2* (07/98)	(lb/MMscf) PM/PM ₁₀ : 7.6 SO ₂ : 0.6 VOC: 5.5 *CO: 84 *NO _x : 100	None	N/A	1.18 MMBtu/hr @8,760 hrs/yr Natural gas is <u>only</u> fuel used. HAPs limit 10/25 plantwide
17	VOC ¹ - Brian W. Beakler, et al "Quantification VOCs kind-drying Red Oak & White Oak Lumber"	Lumber Kiln Max Thruput = 50 MMBF lumber / 12 rolling mos. 47,833 BF/hr ave.	None	N/A	@8,760 hrs/yr, 12 kilns, limited by throughput MBF x 1000 = MMBF Kilns steam heated ¹ worst case, red oak range 0.154 – 0.356 = 0.256 lb/mbf VOC (both white & red are dried) ² used white fir emission factor since

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	(11/07) Formaldehyde ² & Methanol ² – OR State Univ. “Small Scale Kiln Study Utilizing Ponderosa Pine, White Fir . . .” (9/20/00)	<u>Lb/mbf</u> VOC = 0.256 ¹ Formaldehyde = 0.0028 ² Methanol = 0.122 ² Hourly rate based on 24-hr drying cycle Formaldehyde and methanol are naturally occurring HAPs			oak not included HAPs limit 10/25 plantwide
19	Removed with issuance of R9.				
20	AP-42 Chap 9.9.1-1 (03/03)	<u>lbs/ton</u> PM: 0.086 PM ₁₀ : 0.029 Max 1 truck/hr @ max 25 tons/truck Max 100 trucks/mo = 2,500 tons/mo x 12 mos = 30,000 tons/yr	None	N/A	AP-42 is for Grain Truck Shipping as substitute for wood waste (sawdust). Facility can only load one truck per hour. Historical data (last 5 yrs show max 96 loads/mo in 10/07.
22	¹ Provided by manufacturer Southern Felt	PM = PM ₁₀ Outlet grain loading: 0.0001153 Gr/dscf ¹ Exhaust air flow: 25,650 cfm @8,760 hrs/yr	Fabric Filter PE-16-US	99.99%	<u>Baghouse #4</u> Lb/hr = (cfm x gr/dscf) / (7,000 gr/lb x 60 min/hr) tpy = lb/hr x hr/yr / lb/ton
23	¹ Provided by manufacturer Southern Felt	PM = PM ₁₀ Outlet grain loading: 0.0001153 Gr/dscf ¹ Exhaust air	Fabric Filter PE-16-US	99.99%	<u>Baghouse #5</u> Lb/hr = (cfm x gr/dscf) / (7,000 gr/lb x 60 min/hr) tpy = lb/hr x hr/yr / lb/ton

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		flow: 66,750 cfm @8,760 hrs/yr			
24	Mass Balance MSDS	VOC: 1.1% by wt HAPs: 1.1% by wt HAPs limit 10/25 plantwide	N/A	None	Hot Melt Adhesive as applied

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
05 Boiler	PM	5	Once every 5 years or if test fails, two consecutive annual tests until boiler passes. Next test, no later than 11/4/2020.	
	PM ₁₀	201A		
	CO	10		
	NO _x	7E		
06 Boiler	PM	Same as above	One-time Test – Complete – December 2014	
	PM ₁₀			
	CO			
	NO _x			

14. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
None required.				

15. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
05	Performance Tests	PM, PM ₁₀ , CO and NO _x limits	Every 5 years or if failed 2 consecutive successful tests	Yes
06	Performance Test	PM, PM ₁₀ , CO and NO _x limits	One-time	Complete
05/06	Boilers Manufacturer's Specification	Maintain for life of units	On-going	No
05/06	Hourly Operation of SN-05 & 06	Max simultaneous operation of 1-hour during periods of start-up/shutdown.	Monthly	No
05/06	Multi-clone fly ash arrestors Manufacturer's Specification	Maintain for life of units	On-going	No
05/06	Tune-ups	Must be completed as specified in §63.11223 (b)(1) through (7)	Biennially or no more than 25 months after previous tune-up. If unit not operating on the required date, tune-up must be conducted within 1 week of start-up	No
05/06, Facility	Energy Assessment performed by a qualified Energy Assessor	Must be completed according to §63.11214(c.) and Table 2 to Subpart JJJJJ of Part 63, item #4, (1) through (7) and be performed by March 21, 2014.	One time	No
05/06, Facility	Energy Assessment (above)	Maintain Report for life of Facility	On-going	No
05/06	Initial Notification of Compliance Status	Initial due by 9/17/2011. Include the §63.11225(a)(4) certifications.	Complete	Yes
05/06	Annual Notification of	Include the §63.11225(a)(4)	Annually, prepare by 3/1	Yes

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	Compliance Status with NESHAP Subpart JJJJJ	certifications. Include completion of boiler tune-up, date, signed, as appropriate, per §63.11214(b)	each year and received by ADEQ by 3/15 each year	
05/06	Work practices, emission reduction measures, and management practices required by §63.11214	Identify Boiler, date of tune-up, tune-up procedures followed, manufacturer's specs; Document fuel type; Occurrence and duration of malfunction; Corrective action taken	Annually	No
07	Solvent MSDS, Usage, Mass balance	10.28 tpy Acetone	Monthly Material Balance	Yes
08, 09, 10 & 21	VOC, HAP &, MSDSs, Usage, Mass balance	85.0 tpy VOC 6.00 tpy Single HAP 13.0 tpy Total HAPs	Monthly Material Balance	Yes
24	VOC, HAP &, MSDSs, Usage, Mass balance	2.9 tpy VOC 2.87 tpy Single Hap 2.88 tpy Total HAPs	Monthly Material Balance	Yes
08, 09, 10, 21, & 24	Individual HAPs	Not to emit any HAP with TLV less than 1 mg/m ³ at or above 10 tpy	Daily and Monthly	Yes
08, 09, 10, 21, & 24	Individual HAPs	Calculate Short term (Daily) PAER, SC #25	Daily	No
07, 08, 09, 10, 21, & 24	Content Limits	See SC #27	Daily	No
17	Lumber Throughput	50 MMBF dried Lumber per	Monthly	Yes

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Four Wood Storage Silos	A-13	0.0	0.0	0.0	0.0	0.0	0	0.0
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19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0559-AOP-R8

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Unilin North America, LLC-Melbourne
 Permit Number: 0559-AOP-R9
 AFIN: 33-00013

\$/ton factor	23.93	Annual Chargeable Emissions (tpy)	<u>397.78</u>
Permit Type	Modification	Permit Fee \$	<u>1356.831</u>

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	56.7
Initial Title V Permit Fee Chargeable Emissions (tpy)	

HAPs not included in VOC or PM:

Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride

Air Contaminants:

All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensable PM, H2S in TRS, etc.)

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		134.7	182.6	47.9	47.9	182.6
PM ₁₀		133.9	181.8	47.9		
PM _{2.5}			0	0		
SO ₂		6.4	4.5	-1.9	-1.9	4.5
VOC		97.9	97.5	-0.4	-0.4	97.5
CO		98.1	244.7	146.6		
NO _x		91.8	102.9	11.1	11.1	102.9
Single HAP	<input type="checkbox"/>	10	10	0		

