

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1681-AOP-R11 AFIN: 70-00473

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Anthony Forest Products Company
1236 Urbana Road
El Dorado, Arkansas 71730

3. PERMIT WRITER:

Parviz Mokhtari

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Sawmills
NAICS Code: 321113

5. SUBMITTALS:

5/31/2011

6. REVIEWER'S NOTES:

Anthony Forest Products Company (AFIN: 70-00473) operates a sawmill and ancillary operations in Urbana, Arkansas. The purpose of this modification application is to receive authorization for construction and operation of the facility through a variety of modifications.

- Modify the sawmill to have three headrigs instead of two for optimized cutting of logs into rough lumber. This change results in an increase in volume through the sawmill. The edger and trimmer will be replaced with more efficient equipment.
- Replace the two existing planer machines in the planer mill with one new high speed planer. The planer mill will have the ability to process significantly more lumber, but with an improved dust handling system to meet National Fire Protection Association (NFPA) combustible dust standards, the particulate matter emissions are not proposed to increase for this area.

- Add a new trimmer and drop/sorter system that will also optimize planer operation. The planer mill will have the ability to process significantly more lumber, but with an improved dust handling system to meet National Fire Protection Association (NFPA) combustible dust standards, the particulate matter emissions are not proposed to increase for this area.
- Install a new dual path continuous kiln (DPK#1); proposed as SN-23 with multiple vents and abort stack proposed as SN-25.
- For clarification, the source number for the existing Dry Kiln #3 has changed from SN-14 to SN-14(Batch) in the permit.
- Retrofit existing Dry Kiln #3 (SN-14(Batch)) to a dual-path kiln (DPK#2) as SN-14 with multiple vents and abort stack proposed as SN-24.
- Decommission the existing Dry Kiln #2 (SN-02).
- Decommission the existing wood fired boilers (SN-12, SN-13, and SN-16) at different the phases of completion of the project.
- Add a new sawdust storage silo as part of the kiln project to fuel the biomass gasifiers on the DPKs as an insignificant activity.

The total permitted annual emission rate limit changes associated with this modification include: -39.2 tons per year (tpy) PM, -38.8 tpy PM₁₀, -0.3 tpy SO₂, 78.2 tpy VOC , -50.9 tpy CO, -50.1 tpy NO_x, 0.0016 tpy Lead, 1.74 tpy Acetaldehyde, 0.22 tpy Acrolein, 0.046 tpy Acetone, 0.0054 tpy Arsenic, -0.7762 tpy Benzene, 0.00077 tpy Chromium VI, 0.1906 tpy Chlorine, 1.0571 tpy Formaldehyde, -0.832 tpy Hydrogen Chloride, -0.49 tpy Manganese, -0.324 tpy Methanol, 0.842 tpy Phenol, and -0.4414 tpy Styrene.

The table below summarizes the three operating scenarios (I, II, and III) for the modification activities involved in this permitting action.

Operating Scenario				
Source Number	Description	Operating Scenario I (Initial)*	Operating Scenario II (Interim)	Operating Scenario III (Final)
SN-02	Dry Kiln #2 (Holding capacity at 45.5% of the holding capacity of Dry Kiln #3 from R10)	Operating	Operating (Will operate at a lower throughput limit than Scenario I)	Decommissioned (Not Operating)
06	Sawmill	Operating	Operating	Operating
12	Wood-Fired Boiler #1 (29.56 MMBTU/hr)	Operating	Operate only one boiler at a time to heat SN-02	Decommissioned (Not operating)
13	Wood-Fired Boiler #2 (29.56 MMBTU/hr)	Operating		Decommissioned (Not operating)
14(Batch)	Dry Kiln #3	Operating	Being converted (Not operating; converting from batch to DPK #2)	Converted to DPK#2 (Not operating as batch kiln)

Operating Scenario				
Source Number	Description	Operating Scenario I (Initial)*	Operating Scenario II (Interim)	Operating Scenario III (Final)
16	Wood-Fired Boiler #3 (29.75 MMBTU/hr)	Operating	Decommissioned (Not operating)	Decommissioned (Not operating)
20	Log Yard Road	Operating	Operating	Operating
21	Planer Mill	Operating	Operating	Operating
23 and 25	DPK #1	Under construction (Not operating)	Commissioned and Operating	Operating
14 and 24	DPK #2	N/A	Under construction (Not operating)	Commissioned and Operating

* The same permitting requirement in the permit #1681-AOP-R10

The following limits that are listed in the permit were established to avoid PSD review.

SN	Throughput Limit Dried Lumber Produced
14 (DPK#2)	93.5 MMBF per rolling 12 month period
23(DPK#1)	74.8 MMBF per rolling 12 month period

7. COMPLIANCE STATUS:

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

Currently, there is no pending enforcement against this facility.

8. PSD APPLICABILITY:

a. Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? No.

b. Is the facility categorized as a major source for PSD? Yes. After this modification, the facility will become a major source PSD.

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?

Under permit #1681-AOP-R10, the facility was classified as a minor source PSD. The DP Kilns project VOC emission increase is 246.2 tpy which is less the 250 tpy major source for PSD. After the completion of the DP kilns project, the facility will be

classified as a major source PSD. The total project GHG emission increase is 50,866 tpy, which is less than the major source threshold applicable to the facility.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation [NSPS, NESHAP (Part 61 & Part 63), or PSD only]
12, 13, 16	N/A*	40 CFR Part 60, Subpart Dc
Facility	N/A**	40 CFR Part 63, Subpart DDDD

* The facility is subject to 40 CFR Part 60, Subpart Dc since each boiler's designed input heat capacity exceeds 10 MMBTU/hr. However, each boiler is less than 30 MMBTU/hr. Therefore, no pollutant standard or record keeping for this subpart is applicable.

** The facility is subject to 40 CFR Part 63, Subpart DDDD. Other than initial notification there are no applicable requirements for the existing operations.

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. MODELING:

Criteria Pollutants

The tables below summarizes the Aermom modeling results for the three operating scenarios (I, II, and III) for the modification activities involved in this permitting action. Since the kilns have multiple discharge points, multiple emissions points are included in the model.

Operating Scenario I					
Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM ₁₀	19.2	50	Annual	42.0 ^A	84.0
		150	24-Hour	123.6*	82.4
CO	45.0	10,000	8-Hour	356	3.4
		40,000	1-Hour	616	1.5
NO _x	25.6	100	Annual	14.7	14.7

A. Includes Little 2008 PM₁₀ background concentrations of 43 $\mu\text{g}/\text{m}^3$ (24-hour) and 23 $\mu\text{g}/\text{m}^3$ (Annual).

Operating Scenario II					
Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM ₁₀ ^A	13.8	150	24-Hour	133.8 141.8 ^B	89.2
SO ₂	1.6	80	Annual	N/A	
		1300	3-Hour	N/A	
		365	24-Hour	N/A	
CO	35.2	10,000	8-Hour	591.8	5.91
		40,000	1-Hour	1260.7	3.15
NO _x	8.7	100	Annual	N/A	
Pb	0.002	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.005	3.4
A. 43.0 $\mu\text{g}/\text{m}^3$ (PM ₁₀ Background Concentration)					
B. When abort stack is operating.					

Operating Scenario III					
Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM ₁₀ ^A	14.7	150	24-Hour	105.1 141.1 ^B 141.1 ^C	89.2
SO ₂	2.6	80	Annual	N/A	
		1300	3-Hour	N/A	
		365	24-Hour	N/A	
CO	43.5	10,000	8-Hour	1115.5	11.16
		40,000	1-Hour	2578.7	6.5

Operating Scenario III					
Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
NO _x	18.8	100	Annual	N/A	
Pb	0.003	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.01	6.7
A. 43.0 $\mu\text{g}/\text{m}^3$ (PM ₁₀ Background Concentration)					
B. When abort stack is operating.					

Non-Criteria Pollutants:

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Operating Scenario I				
Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11*TLV	Proposed lb/hr	Pass?
Acrolein	0.2293	0.0252	0.73	N
Benzene	1.597	0.175	0.60	N
Formaldehyde	0.368	0.04048	1.2	N
Methanol	262.085	28.82935	4.10	Y
Styrene	85.562	9.41182	0.3	Y
HCl	7.458	0.82038	1.27	N
Mercury	0.01	0.0011	0.000128	Y
Cadmium	0.01	0.0011	0.00202	N
Chromium	0.01	0.0011	0.00185	N
Lead	0.012	0.00132	0.00199	N
Manganese	0.2	0.022	0.84	N

Operating Scenario II				
Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11*TLV	Proposed lb/hr	Pass?
Acetaldehyde	45.0409	4.954499	3.34	Yes
Acrolein	0.229284	0.025221	0.428	No
Benzene	1.597342	0.175708	0.428	No
Formaldehyde	0.368466	0.040531	0.8748	No
HCl	2.98	0.3278	0.8952	No
Lead	0.05	0.0055	0.001961	Yes
Manganese	0.2	0.022	0.1532	No
Mercury	0.01	0.0011	4.25E-05	Yes
Methanol	262.0859	28.82945	2.921	Yes
Chlorine	1.450102	0.159511	0.0079	Yes
Phenol	19.2454	2.116994	0.092	Yes
Styrene	85.20245	9.37227	0.14752	Yes
Acetone	1187.12	130.5832	0.004752	Yes
Arsenic	0.01	0.0011	0.00121	No
Nickel	1.5	0.165	0.00148	Yes
Chromium hexavalent	0.005	0.00055	7.03E-05	Yes
Cadmium	0.002	0.00022	0.000671	No
Chromium	0.05	0.0055	0.000637	Yes

Operating Scenario III				
Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11*TLV	Proposed lb/hr	Pass?
Acetaldehyde	45.0409	4.954499	3.6622	Yes
Acrolein	0.229284	0.025221	0.14956	No
Benzene	1.597342	0.175708	0.2312	No
Formaldehyde	0.368466	0.040531	0.97	No
HCl	2.98	0.3278	1.0452	No
Lead	0.05	0.0055	0.00264	Yes
Manganese	0.2	0.022	0.3472	No
Methanol	262.0859	28.82945	3.34	Yes
Phenol	19.2454	2.116994	0.2072	Yes
Styrene	85.20245	9.37227	0.10452	Yes
Chlorine	1.450102	0.159511	0.03162	Yes
Acetone	1187.12	130.5832	0.010452	Yes
Arsenic	0.01	0.0011	0.00121	No
Chromium hexavalent	0.005	0.00055	0.000176	Yes

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Operating Scenario I			
Pollutant	(PAIL, $\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Acrolein	2.29	2.23	Y
Benzene	15.97	0.75	Y
Formaldehyde	15.0	3.64	Y
HCl	74.58	1.49	Y
Cadmium	0.1	0.0024	Y
Chromium	0.1	0.0022	Y
Lead	0.12	0.0027	Y
Manganese	2.0	0.23	Y
Nickel	1.0	0.0053	Y
Mercury	0.10	0.00015	Y

Operating Scenario II			
Pollutant	(PAIL, $\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Acrolein	2.29	2.25	Y
Benzene	15.97	2.85	Y
Formaldehyde	15.0	9.04	Y
HCl	74.58	8.6	Y
Manganese	2.0	0.9	Y
Nickel	1.0	0.0053	Y
Mercury	0.10	0.00015	Y
Arsenic	0.1	0.0185	Y

Operating Scenario III			
Pollutant	(PAIL, $\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Acrolein	2.29	2.27	Y
Benzene	15.97	3.54	Y
Formaldehyde	15.0	14.78	Y
HCl	74.58	15.98	Y
Manganese	2.0	1.34	Y
Arsenic	0.1	0.0185	Y

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Other Modeling: N/A

Odor: N/A

H₂S Modeling: N/A

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H₂S Standards Y/N

If exempt, explain: _____

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
H ₂ S	20 parts per million (5-minute average*)	N/A	
	80 parts per billion (8-hour average) residential area	N/A	
	100 parts per billion (8-hour average) nonresidential area	N/A	

*To determine the 5-minute average use the following equation

$$C_p = C_m (t_m/t_p)^{0.2} \text{ where}$$

C_p = 5-minute average concentration

C_m = 1-hour average concentration

t_m = 60 minutes

t_p = 5 minutes

12. CALCULATIONS:

Operating Scenario	SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
III	06	AP-42 Section 10.1	Rough Logs throughput: 600,000 (174.0 MMBF/yr) ton/yr and 192 ton/hr (55,680 BF/hr) (The estimate conversion factor for rough logs to BF for the modernized sawmill is 0.29 MBF/ton logs.) 0.024 lb PM/ton (debarking) 0.00048 lb PM10/ton (debarking) 0.35 lb PM/ton (sawing) 0.007 lb PM10/ton (sawing)	Cyclone, which vents inside the sawmill building (50% reduction is taken for the control efficiency of being within an enclosure)	50%	As the Sawmill is within a building, a 50% reduction is taken for the control efficiency of being within an enclosure for the sawing portion of emissions.
		Emissions have historically been estimated for the AFP Urbana Sawmill using log throughput and AP-42 Section 10.1 emission factors for Total Suspended Particulate (TSP). Although this section of AP-42 has been revoked by EPA, no better factors have been identified and thus the emission factors are frequently used by facilities and regulatory agencies. PM ₁₀ emissions are conservatively estimated to be equal to 2% of PM or TSP emissions. Various particle size distribution evaluations have indicated that the percentage of sawdust and bark which can be classified as PM ₁₀ is in the range of 0.07% to 1.89%. ADEQ memorandum dated August 22, 2003 from Charles Hurt to Thomas Rheame supported this as well as North Carolina DENR document Titled "Estimating Emissions from Generation and Combustion of "Waste" Wood".				
I	02 & 14 (Batch) (Dry Kilns)	Industry Average NCASI	3.5 lb VOC/MBF 0.205 lb MeOH/MBF 0.016 lb Formaldehyde/MBF 0.006 lb Acrolein/MBF 0.039 lb Acetaldehyde/MBF	None	N/A	uncontrolled VOC and HAP emissions Throughput for both dry kilns = 135 MM BF
II	02	Industry Average NCASI	3.5 lb VOC/MBF 0.205 lb MeOH/MBF 0.016 lb Formaldehyde/MBF 0.006 lb Acrolein/MBF 0.039 lb Acetaldehyde/MBF	None	N/A	Interim period: Batch Size per Cycle Time ≤ 7,000 BF per hour Size of the batch (BF/batch) divided by the drying time (hours/batch)
I and II	12, 13, and 16	AP-42, Test, Vendor	4,350 Btu/lb fuel 0.144 lb PM ₁₀ /MMBTU 0.5 lb SO ₂ /hr 0.286 lb NO _x /MMBTU 0.50 lb CO/MMBTU 0.017 VOC lb/MMBTU/hr	Cyclones	99% for PM only	Boiler #3 March 2008 stack test for PM ₁₀ with 14% safety factor
III	20	AP-42	660,000 ton logs/yr 13,680 VMT 0.6 mi of road	Wet Suppression	50%	
	21	Vendor	0.01 gr/scf 42,800 cfm	Cyclone and Baghouse	Cyclone 94% & Baghouse 99.9%	This equipment vents through a cyclone. The outlet of the cyclone vents to baghouse and then to

Operating Scenario	SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
						<p>the atmosphere (SN-21). Shavings and sawdust from the baghouse/cyclone are dropped into a woodwaste storage bin (insignificant activity) where it is then loaded onto a truck and shipped off-site. Control efficiency included in emission factor.</p> <p>Dried Lumber throughput= 170.0 MMBF/yr</p>
II and III	23 (DPK#1) & 14(DPK#2)	<p>NCDENR Wood Kiln Emission Calculator Factor Sheet for Softwood*</p> <p>AP42 Table 1.6-2 average of wet and dry wood factors and Table 1.6-3</p>	<p>PM = 0.36 lb/MBF PM₁₀ = 0.216 lb/MBF VOC as C = 3.830 lb/MBF VOC as VOC (pinene) = 4.340 lb/MBF SO₂ = 2.50E-02 lb/MMBtu NO_x = 2.56E-01 lb/MMBtu CO = 0.6 lb/MMBtu Methanol = 0.161 lb/MBF Phenol = 0.01 lb/MBF Formaldehyde = 0.047 lb/MBF Acetaldehyde = 0.052 lb/MBF Acrolein = 0.007 lb/MBF Benzene = 4.20E-03 lb/MMBtu Chlorine = 7.90E-04 lb/MMBtu Styrene = 1.90E-03lb/MMBtu Acetone = 1.90E-04 lb/MMBtu Arsenic = 2.20E-05 lb/MMBtu Chromium hexavalent = 3.50E-06 lb/MMBtu Lead = 4.80E-05 lb/MMBtu Manganese = 1.60E-03 lb/MMBtu HCl = 1.90E-02 lb/MMBtu</p>	None	N/A	<p>Throughput at design capacity Kiln#1: 74,800 MBF/yr 9.2MBF/hr 25MMBtu/hr</p> <p>Throughput at design capacity DP Kiln#2: 93,500 MBF/yr 11.5 MBF/hr 30 MMBtu/hr</p> <p>DPK #1 = 25 MMBtu/hr sawdust burner; DPK #2 = 30 MMBtu/hr sawdust burner. DPK#1 =5705 lb of sawdust per hour DPK #2) = 6846 lb of sawdust per hour</p> <p>Pollutant emissions generated during sawdust combustion and lumber drying will be emitted from the kiln's entrance and exit doors (estimated 40% of total emissions equally divided among pseudo-stacks A and B) and through stacks above each of those doors (estimated 60% of total emissions equally divided</p>

Operating Scenario	SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
						among 4 stacks, C, D, E, and F). The gasifiers will each be equipped with a by-pass stack; this stack will only operate during cold startups, kiln shutdowns, and equipment malfunctions.
		*VOC as C (NCDENR Wood Kiln Emission Calculator Factor Sheet for Softwood), VOC as VOC (pinene) (NCDENR Wood Kiln Emission Calculator Factor Sheet for Softwood), Methanol (NCDENR Wood Kiln Emission Calculator Factor Sheet for Softwood), Phenol (NCDENR: Table 2A to App B emission factors for PCWP MACT) Formaldehyde (Maximum run plus 20% safety factor from stack testing completed at a similar unit), Acetaldehyde (Industry Group factor for a full scale kiln plus 20% safety factor), Acrolein (NCDENR Wood Kiln Emission Calculator Factor Sheet for Softwood plus 20% safety factor), PM total (Unpublished industry group factor previously used in permitting similar units plus a 20% safety factor), and PM 10 (PM total factor (0.36 lb/MBF) with conservative assumption that 60% of PM is smaller than 10 micron or PM10)				
	23 (DPK#1) & 14(DPK#2)	VOC (pinene)	4.340 lb/MBF	None	N/A	Emissions for the facility's kilns for continuous lumber drying from direct firing of biomass are estimated using emission factors from various sources. Only HAPs that require inclusion per the PAER evaluation are listed on the HERT.
	23 (DPK#1) & 14(DPK#2)	VOC (pinene) Methanol Phenol Acrolein	4.340 lb/MBF 0.161 lb/MBF 0.01 lb/MBF 0.007 lb/MBF	None	N/A	NCDER Wood Kiln Emission Control Factor for Softwood
		Formaldehyde	0.047 lb/MBF	None	N/A	Stack testing from similar facility
		SO ₂ NO _x CO	0.025 lb/MMBtu 0.256 lb/MMBtu 0.6 lb/MMBtu	None	N/A	AP42 Table 1.6-2
	24 and 25	Startup DPK #1/DPK#2 Combined using Diesel fuel (Abort Stack Emissions)	SO ₂ = 7.1 lb/1000 gal NO _x = 20 lb/1000 gal CO = 5 lb/1000 gal PM = 2 lb/1000 gal TOC = 1.1 lb/1000 gal			Lumber Drying Kilns Emission Calculations for startup using Diesel Fuel as Starter Fluid Maximum usage of diesel for startup: 10 gal/hr 240 gal/yr
	24 and 25	Startup using sawdust (Abort Stack Emissions)	PM =0.33 lb/MMBtu PM ₁₀ = 0.29 lb/MMBtu SO ₂ =0.025 lb/MMBtu NO _x = 0.22 lb/MMBtu CO = 0.6 lb/MMBtu VOC = 0.017 lb/MMBtu			Ap-42, Table 1.6-1 (9/03) for wet wood AP-42, Table 1.6-2 (9/03)

Operating Scenario	SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	24 and 25		Acrolein=4.00E-03 lb/MMBtu Formaldehyde=4.40E-03 lb/MMBtu Benzene=4.20E-03 lb/MMBtu Acetaldehyde=9.10E-07lb/MMBtu HCl=1.90E-02 lb/MMBtu Manganese=1.60E-03 lb/MMBtu Arsenic=2.20E-05 lb/MMBtu	None	N/A	AP-42, Table 1.6-2 (9/03) AP-42, Table 1.6-3 (9/03) AP-42 Table 1.6-4 (9/03) <ul style="list-style-type: none"> • Sawdust heat value Heat Value = 4382 Btu/lb • Throughput (Startup sawdust)=2000 lb/hour • Abort Stack Max Operation = 288 hour per year per kiln • Maximum burner capacity during startup or idling events =8.8 maximum MMBtu/hr • Maximum duration of startup = 24 hours • Maximum 12 startups for each kiln in a year or 288 hr/yr

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN(s)	Pollutant	Test Method	Test Interval	Justification For Test Requirement
16	PM ₁₀	201A and 202	Pass- Once every five years Fail- Once every other year	Dept. Guidance (Test for Emission Verification)
23(DPK#1) 14(DPK#2)	PM ₁₀	5	Test only one kiln every five years (alternating schedule)	
	CO	10	Test only one kiln every five years (alternating schedule)	
	NO _x	7E	Test only one kiln every five years (alternating schedule)	
	VOC	25A	One Time Each Kiln	
	Formaldehyde	316	One Time Each Kiln	

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)
The facility is not required to maintain monitoring devices or CEMS.				

15. RECORDKEEPING REQUIREMENTS:

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

Operating Scenario	SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
I	06	Logs Debarked and Sawed	650,000 tons/yr	Monthly	Y
	20	Wet Suppression Application	As needed to control visible emissions from traffic	As needed but no less than once a month	N

Operating Scenario	SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
		Logs	660,000 tons/yr	monthly	Y
	21	Lumber Throughput	135.0 MMBF/yr	Monthly	Y
	12	Steam Produced	489,600 lb steam/day 178.7 MM lb steam/yr	Daily	Y
	13	Steam Produced	489,600 lb steam/day 178.7 MM lb steam/yr	Daily	Y
	16	Steam Produced	489,600 lb steam/day 178.7 MM lb steam/yr	Daily	Y
	02 and 14 (Dry Kilns #1 and #2)	Lumber Throughput	135.0 MMBF/yr	Monthly	Y
	Facility	Record of operating scenario	N/A	As Needed	N
II	06	Logs Debarked and Sawed	650,000 tons/yr	Monthly	Y
	20	Wet Suppression Application	As needed to control visible emissions from traffic	As needed but no less than once a month	N
		Logs	660,000 tons/yr	monthly	Y
	21	Lumber Throughput	135.0 MMBF/yr	Monthly	Y
	12*	Steam Produced	489,600 lb steam/day 178.7 MM lb steam/yr	Daily	Y
	13*	Steam Produced	489,600 lb steam/day 178.7 MM lb steam/yr	Daily	Y
	02 (Dry Kiln)	Lumber Throughput	Drying Batch Size per Cycle Time \leq 7,000 BF	Daily	Y

Operating Scenario	SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)	
			per hour			
			61.32 MMBF/yr	Monthly	Y	
	23 (DP Kiln#1)	Lumber Throughput	74.8 MMBF/yr	Monthly	Y	
		VOC emissions	See Plantwide Condition #15	Annual	Y	
	25	Abort stack operating hours	288 per year per stack	Monthly	Y	
		Diesel fuel usage limit as starter fluid	120 gallons per year	Daily when in startup	N	
		Sawdust throughput limit for gasifier/burner	2000 lb of sawdust per hour	Daily when in startup	N	
	Facility	Record of operating scenario	N/A	As Needed	N	
	III	06	Logs debarked and sawed	600,000 tons	Monthly	Y
		20	Wet Suppression Application	As needed to control visible emissions from traffic	As needed but no less than once a month	N
Logs			660,000 tons/yr	Monthly	Y	
21		Lumber Throughput	170.0 MMBF/yr	Monthly	Y	
23 (DP Kiln#1)		Lumber Throughput	74.8 MMBF/yr	Monthly	Y	
		VOC emissions	See Plantwide Condition #15	Annual	Y	
14 (DP Kiln#2)		Lumber Throughput	93.5 MMBF/yr	Monthly	Y	
		VOC emissions	See Plantwide Condition #15	Annual	Y	
24		Abort stack operating hours	288/yr	Monthly	Y	
		Sawdust throughput limit for gasifier/burner	2000 lb of sawdust per hour	Daily when in startup	N	

Operating Scenario	SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
	24 and 25	Diesel fuel usage limit as starter fluid	240 gallons per year for both DPK #1 and #2 combined	Daily when in startup	N
	25	Abort stack operating hours	288/yr	Monthly	Y
		Sawdust throughput limit for gasifier/burner	2000 lb of sawdust per hour	Daily when in startup	N
	Facility	Record of operating scenario	N/A	As Needed	N

* Operating only one boiler (SN-12 or SN-13) at a time to heat SN-02.

16. OPACITY:

SN	Opacity %	Justification for limit	Compliance Mechanism
02 and 14(Batch)	20	Regulation 19	Weekly observation
06	20	Regulation 19	Weekly observation
12,13,16	20	Regulation 19	Weekly observation
20	5	Regulation 18	Weekly observation
21	5	Regulation 18	Monthly observation
23 (DP Kiln#1)	20	Regulation 19	Weekly observation
14 (DP Kiln#2)	20	Regulation 19	Weekly observation

17. DELETED CONDITIONS:

Former SC	Justification for removal
	N/A

18. GROUP A INSIGNIFICANT ACTIVITIES

Source Name	Group A Category	Emissions (tpy)							
		PM	PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
								Single	Total
Bark storage pile	A-13	1.0	0.5						
Sawdust storage pile	A-13	1.3	0.7						
Boiler ash (Biochar) storage Pile	A-13	1.5	0.8						
Planer Mill Woodwaste storage bin	A-13	0.06	0.01						
Fuel Storage Silo	A-13	0.03	0.02						
1,000 Gasoline tank	A-13				0.67				
500 gallon diesel tank	A-3				0.01				
600 gallon diesel tank	A-3				0.01				
1000 gallon diesel tank	A-3				0.01				

19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #
1681-AOP-R10

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

 Phillip Murphy, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 12-15-10

Facility Name: Anthony Forest Products (Operating Scenario III)
 Permit Number: 1681-AOP-R11
 AFIN: 7000473

\$/ton factor	22.65	Annual Chargeable Emissions (tpy)	525.5645
Permit Type	Modification	Permit Fee \$	1000

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)	-11.7955
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	<input checked="" type="checkbox"/>	168.6	129.4	-39.2	-39.2	129.4
PM ₁₀	<input type="checkbox"/>	71.1	32.3	-38.8		
SO ₂	<input checked="" type="checkbox"/>	6.6	6.3	-0.3	-0.3	6.3
VOC	<input checked="" type="checkbox"/>	244.4	322.6	78.2	78.2	322.6
CO	<input type="checkbox"/>	197.1	146.2	-50.9		
NO _x	<input checked="" type="checkbox"/>	112.3	62.4	-49.9	-49.9	62.4
Lead	<input type="checkbox"/>	0.01	0.0116	0.0016		
Acetaldehyde	<input type="checkbox"/>	2.64	4.38	1.74		
Acrolein	<input type="checkbox"/>	2.21	2.43	0.22		
Acetone	<input checked="" type="checkbox"/>	0	0.0459	0.0459	0.0459	0.0459
Arsenic	<input type="checkbox"/>	0	0.0054	0.0054		
Benzene	<input type="checkbox"/>	1.8	1.0238	-0.7762		
Chromium VI	<input type="checkbox"/>	0	0.00077	0.00077		
Chlorine	<input checked="" type="checkbox"/>	0	0.1906	0.1906	0.1906	0.1906
Formaldehyde	<input type="checkbox"/>	2.9	3.957	1.057		
Hydrogen Chloride*	<input checked="" type="checkbox"/>	5.46	4.628	-0.832	-0.832	4.628
Manganese	<input type="checkbox"/>	0.88	0.3896	-0.4904		
Methanol	<input type="checkbox"/>	13.9	13.576	-0.324		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Phenol	☐	0	0.842	0.842		
Styrene	☐	0.9	0.4586	-0.4414		