

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0551-AOP-R11 AFIN: 20-00017

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Carthage Forest Products, LLC
322 North Oak Street
Carthage, Arkansas 71725

3. PERMIT WRITER:

Jesse Smith

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Sawmills
NAICS Code: 321113

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

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
5/30/2023	Minor Modification	Removal of SN-01 through SN-05 and SN-13 Updated emissions of remaining sources due to change of throughput/operations Add new sources SN-14 through SN- 17

6. REVIEWER'S NOTES:

Carthage Forest Products, LLC operates a lumber mill located in Carthage, AR. This application was submitted to modify the existing Title V permit as follows:

- Remove sources SN-01, SN-02A, SN-03, SN-04, and SN-13 from the permit.

- Update emissions of sources SN-06, SN-10, SN-11, and SN-12 due to changes in method of operation.
- Add the new sources SN-15, SN-16, and SN-17
- Convert existing source SN-05 from a natural gas burner batch kiln to a slope grate sawdust burner dual path continuous drying kiln. Reclassify SN-05 as a new source SN-14 due to the extent of the conversion.

Emission changes as a result of these modifications are as follows: Decrease of 204.1 tpy PM, decrease of 131.2 tpy PM₁₀, decrease of 6.2 tpy SO₂, increase of 45.0 tpy VOC, decrease of 217.5 tpy CO, decrease of 189.3 tpy NO_x, decrease of 0.00771 tpy Lead, decrease of 3.92 tpy Total HAP, and decrease of 1.86 tpy Acetone.

7. COMPLIANCE STATUS:

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

The facility was last inspected on February 15, 2023. There were no concerns noted at this time. There are also no significant violations reported for the facility on EPA's ECHO database.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? 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*

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
09	HAPs	40 C.F.R. Part 60, Subpart III
17	VOCs	40 C.F.R. Part 63, Subpart CCCCCC

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
N/A				

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N

(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Rule 18 requirement.)

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
N/A		

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Division of Environmental Quality has deemed the PAER to be the product, in lb/hr, of 0.11 and the

Threshold Limit Value (mg/m³), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Acrolein	0.23	0.022	0.341	N
Arsenic	0.01	0.001	0.0014	N
Beryllium	0.0005	0.000055	0.000071	N
Cadmium	0.002	0.0002	0.00033	N
Chromium, total	0.5	0.055	0.001321	Y
Chromium, Hex	0.01	0.0011	0.00022	Y
Lead	0.05	0.006	0.0031	Y
Manganese	0.2	0.022	0.010	N
Mercury	0.01	0.0011	0.00023	Y
Max Individual PAH/POM	0.2	0.022	0.0005	Y
Max Individual PCB	0.5	0.055	0.0001	Y

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 Division of Environmental Quality to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

There were no hourly HAP emission limits increases since the previous models were performed. This modeling is from R8.

Pollutant	PAIL (µg/m ³) = 1/100 of Threshold Limit Value	Modeled Rate (lb/hr)	Modeled Concentration (µg/m ³)	Pass?
Acrolein	2.3	0.391	1.80	Y
Arsenic	0.1	0.0101	0.0018	Y
Beryllium	0.005	0.000081	0.00002	Y

Pollutant	PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Rate (lb/hr)	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Cadmium	0.02	0.0011	0.0017	Y
Manganese	2.0	0.1001	0.017	Y

c) H₂S Modeling:

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

If exempt, explain: No H₂S emissions

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
06 & 10	EPA Region 10 Emission Factors for Activities at Sawmills, Sawing	0.35 lb _{PM} /ton logs 0.175 lb _{PM10} /ton logs			
07	AP-42 13.2.1.3 Equations 1 and 2	<u>Hourly:</u> 1.058301 lb _{PM} /VMT 0.206119 lb _{PM10} /VMT <u>Annually:</u> 0.98219 lb _{PM} /VMT 0.191296 lb _{PM10} /VMT			
08	AP-42 13.2.2.2 Equations 1a and 2	<u>Hourly:</u> 3.521804 lb _{PM} /VMT 1.003876 lb _{PM10} /VMT <u>Annually:</u> 2.508683 lb _{PM} /VMT 0.71509 lb _{PM10} /VMT			
09	AP-42 Table 3.3-1 & 3.3-2	0.0022 lb _{PM/PM10} /hp-hr 0.00247 lb _{VOC} /hp-hr 0.00668 lb _{CO} /hp-hr 9.2 g _{NOx} /KW-hr			

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		2.05E-3 lb _{SO2} /hp-hr 9.25E-5 lb _{Acrolein} /MMBtu 9.33E-4 lb _{Benzene} /MMBtu 1.18E-3 lb _{Formald} /MMBtu 4.10E-4 lb _{Toluene} /MMBtu <u>Crankcase EF</u> 4.41E-5 lb _{VOC} /hp-hr			
11	EPA Region 10 Emission Factors for Activities at Sawmills, Debarking	0.024 lb _{PM} /ton 0.0012 lb _{PM10} /ton			
12	ADEQ Memorandum	<u>Chip Production</u> <u>Storage</u> 0.0004 lb _{PM} /ton 0.00004 lb _{PM10} /ton <u>Loadout</u> 0.0008 lb _{PM} /ton 0.00008 lb _{PM10} /ton <u>Bark Production</u> <u>Storage</u> 0.0022 lb _{PM} /ton 0.00017 lb _{PM10} /ton <u>Loadout</u> 0.0044 lb _{PM} /ton 0.00034 lb _{PM10} /ton <u>Shavings Production</u> <u>Storage</u> 0.0011 lb _{PM} /ton 0.0022 lb _{PM10} /ton <u>Loadout</u> 0.00009 lb _{PM} /ton 0.00018 lb _{PM10} /ton			
14	Georgia EPD for Lumber Kilns	<u>Lb/MBf lumber</u> 0.14 PM 0.104 PM ₁₀ 3.8 VOC 0.025 SO ₂			

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		0.73 CO 0.28 NO _x			
	AP-42 Table 1.6-4	<u>Lb/MMBtu Biomass</u> 4.80E-05 Lead 209.56 CO _{2e}			
	PCWP Memo	<u>Lb/MBf lumber</u> 0.04 Acetaldehyde 0.004 Acrolein 0.065 Formaldehyde 0.18 Methanol 0.01 Phenol 0.004 Propionaldehyde			
15	EPA Region 10 Emission Factors for Activities at Sawmills, pneumatic conveyance with high efficiency cyclone	<u>Lb/ODT</u> 0.2 PM 0.19 PM ₁₀			
16	Baghouse vendor data	<u>Gr/dscf</u> 0.01 PM 0.004 PM ₁₀			
17	AP-42 Chapter 7 Minnesota Pollution Control Agency Spreadsheet	0.470 potential ton/yr			Gasoline aboveground 26,000 gal/yr

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
N/A				

17. 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)
N/A				

18. 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)
09	Hours of Operation	500 hours/cal. yr	Monthly	Y
14	Dried Lumber	68.5 MMBF dried lumber/ rolling 12 month	Monthly	Y
17	Gasoline	26,000 Gallons/year 10,000 gallons/month	Monthly	N

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
06	5%	Rule 18.501	Weekly Observations
09	20%	Rule 19.503	Annual Observation
10 & 11	No VEs	Rule 18.501	Weekly Observations
12 & 14	20%	Rule 19.503	Daily Observations
15	20%	Rule 19.503	Daily Observations
16	5%	Rule 19.503	Daily Observations

20. DELETED CONDITIONS:

Former SC	Justification for removal
1-36	Removal of SN-01 through SN-05

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)						
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
							Single	Total
1,000 Gallon Diesel Storage Tank	A-3			0.002				

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Ash Storage Pile	A-13	0.092						
Bark Hog & Horizontal Hog	A-13	0.5						

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0551-AOP-R10

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Carthage Forest Products, LLC
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\$/ton factor	27.27	Annual Chargeable Emissions (tpy)	211.4
Permit Type	Minor Mod	Permit Fee \$	500

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	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	-354.6
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 condensible 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		240.1	36	-204.1	-204.1	36
PM ₁₀		144.8	13.6	-131.2		
PM _{2.5}		0	0	0		
SO ₂		7.2	1	-6.2	-6.2	1
VOC		119.5	164.5	45	45	164.5
CO		242.9	25.4	-217.5		
NO _x		199.2	9.9	-189.3	-189.3	9.9
Lead	☐	0.0136	0.0042	-0.0094		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Total Chargeable HAP	☐	5.63	0	-5.63		
Total Other HAP	☐	14.32	10.4	-3.92		
Acetone	☐	1.86	0	-1.86		