

STATEMENT OF BASIS

For the issuance of Air Permit # 1681-AOP-R19 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, LLC
1236 Urbana Road
El Dorado, Arkansas 71730

3. PERMIT WRITER:

Alexander Sudibjo

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 |
|---------------------|---|---|
| 7/18/2019 | Renewal | Updated emission calculations for SN-06 |

6. REVIEWER'S NOTES:

This is a Title V permit renewal for the facility. In this renewal, the facility is requesting the following changes:

1. Update the emissions from the abort stacks (SN-25, SN-28, and SN-31) to be bubbled with the emissions from the DPKs (SN-23, SN-27, and SN-30) during normal operations. The hot gas stream from the gasifier/burners may be diverted to the DPK abort stacks (SN-25 for DPK #1, SN-31 for DPK #2, and SN-28 for

DPK #3) for unplanned shutdowns or temporary idling during normal operations. There is no emissions increase.

2. Remove the throughput limit for sawdust from Specific Condition #4. The DPK emissions are calculated based on dried lumber throughput only.
3. Update Specific Condition #10 to remove the requirement to test at 90% of the gasifier/burner capacity. Testing shall be conducted with the source operating at 90% of the kiln capacity only.
4. Update Specific Condition #11 to apply only during startups. Diesel will only be burned during startups and the hour of operation limits only apply for startups.
5. Remove Specific Condition #18 and #19. Emissions from the sawmill (SN-06) will be based on the logs being transported since all raw logs transported onsite are processed through the sawmill.
6. Remove throughput limits for by-products from Specific Condition #24. The emission calculations for the by-products are based on the mill's recovery factors and they have been updated to provide a more conservative estimate.

The facility's permitted annual emissions are increasing by 1.4 tpy PM and 0.2 tpy PM₁₀.

7. COMPLIANCE STATUS:

The facility was last inspected on November 15, 2017. No violations were found during the inspection. ECHO shows an unknown compliance status (<https://echo.epa.gov/detailed-facility-report?fid=110001702346>).

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/A

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

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

If yes for 8(b), explain why this permit modification is not PSD. This permit modification does not include a major modification as defined by 40 C.F.R. § 52.21(b)(2).

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

| Source | Pollutant | Regulation (NSPS, NESHAP or PSD) |
|-----------|-----------|----------------------------------|
| Facility | - | 40 CFR Part 63, Subpart DDDD |
| 26 | - | 40 CFR Part 60, Subpart IIII |
| 26 | - | 40 CFR Part 63, Subpart ZZZZ |
| 27 and 28 | VOC | PSD |

10. PERMIT SHIELD – TITLE V PERMITS ONLY:

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

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

If yes, are applicable requirements included and specifically identified in the permit? N
If not, explain why. The applicant did not include this information.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

| Source | Inapplicable Regulation | Reason |
|----------------|-------------------------|--------|
| None Specified | | |

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. 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 ADEQ Air Permit Screening Modeling Instructions.

b) 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/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? |
|-------------------|-----------------------------|------------------------------|----------------|-------|
| Lead | 0.05 | 5.50E-03 | 5.41E-03 | Yes |
| Acrolein | 0.229 | 0.025 | 0.321 | No |
| Formaldehyde | 0.368 | 0.04 | 1.27 | No |
| Methanol | 262.1 | 28.83 | 4.64 | Yes |
| Pentachlorophenol | 0.5 | 0.055 | 5.75E-06 | Yes |
| Antimony | 0.5 | 0.055 | 8.91E-04 | Yes |
| Arsenic | 0.01 | 1.10E-03 | 2.48E-03 | No |
| Beryllium | 5.00E-05 | 5.50E-06 | 1.24E-04 | No |
| Cadmium | 0.01 | 1.10E-03 | 4.62E-04 | Yes |
| Chromium | 0.5 | 0.055 | 2.37E-03 | Yes |
| Chromium VI | 0.01 | 1.10E-03 | 3.03E-04 | Yes |
| Cobalt | 0.02 | 2.20E-03 | 7.33E-04 | Yes |
| Manganese | 0.1 | 0.011 | 0.18 | No |
| Mercury | 0.01 | 1.10E-03 | 3.95E-04 | Yes |
| Phosphorus | 0.1 | 1.10E-03 | 3.05E-03 | Yes |
| Selenium | 0.2 | 2.20E-03 | 3.16E-04 | 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.

| Pollutant | PAIL (µg/m ³) = 1/100 of Threshold Limit Value | Modeled Concentration (µg/m ³) | Pass? |
|--------------|---|---|-------|
| Acrolein | 2.292 | 1.007 | Yes |
| Formaldehyde | 15 | 5.363 | Yes |
| Arsenic | 0.1 | 0.0092 | Yes |
| Beryllium | 5.00E-04 | 4.58E-04 | Yes |

| Pollutant | PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value | Modeled Concentration ($\mu\text{g}/\text{m}^3$) | Pass? |
|-----------|--|--|-------|
| Manganese | 1.0 | 0.666 | Yes |

c) H₂S Modeling:

The facility does not have any H₂S emissions.

13. CALCULATIONS:

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|-----------------------|---|---|----------------------------|------------------------------|---|
| 06 Debarking | AP-42, 10.1 TCEQ Wood Industry Emission Factors – Log Debarking Controls (Appendix A7) | PM = 0.024 lb/ton PM ₁₀ = 11% of PM PM _{2.5} = 50% of PM ₁₀ | Partial building enclosure | 95% | 920,000 ton/yr 225 ton/hr |
| 06 Sawing | AP-42 10.1 TCEQ Wood Industry Emission Factors – Sawing Controls (Appendix A7) | PM = 0.35 lb/ton PM ₁₀ = 11% of PM PM _{2.5} = 50% of PM ₁₀ | Building Enclosure | 90% | 920,000 ton/yr 225 ton/hr |
| 20 | AP-42, 13.2 | 19 paved sections 0 unpaved sections | Wet Suppression | 50% | Logs = 920,000 ton/yr Chips/barks = 316,658 ton/yr Shavings = 57,517 ton/yr Finished Lumber = 261,535 ton/yr |
| 21 | Vendor | 0.01 grain/scf 42,800 cfm 7000 grain/lb PM ₁₀ = 40% of PM PM _{2.5} = 50% of PM ₁₀ | Cyclone and Baghouse | Cyclone 94% & Baghouse 99.9% | 3,600 hr/yr |
| 23, 27, 30 Biomass | ADEQ Memo (10/31/2014) | VOC = 3.8 lb/MBF | - | - | <u>SN-23</u> 25 MMBtu/hr 8.2 MBF/hr 71,610 MBF/yr 219,000 MMBtu/hr 2.9 tons sawdust/hr |
| | NCDENR Wood Kiln Emission Calculator | PM/PM ₁₀ /PM _{2.5} = 0.143 lb/MBF Acetaldehyde = 0.052 lb/MBF Acrolein = 0.0075 lb/MBF Methanol = 0.161 lb/MBF Phenol = 0.01 lb/MBF | | | <u>SN-27</u> 31.5 MMBtu/hr 8.7 MBF/hr 75,000 MBF/yr |
| | NCASI Special Report 08-01, May 2008 | Formaldehyde = 0.04 lb/MBF | | | |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|---------------------------|---|---|-------------------|------------------------------|--|
| | AP-42, 1.6 | SO ₂ = 0.025 lb/MMBtu CO = 0.6 lb/MMBtu Various HAPs | | | 275,940 MMBtu/hr 3.6 tons sawdust/hr |
| | GHG Mandatory Reporting Rule | CO ₂ = 206.7352 lb/MMBtu CH ₄ = 0.0158688 lb/MMBtu N ₂ O = 0.007934 lb/MMBtu | | | SN-30 30 MMBtu/hr 11.9 MBF/hr 93,500MBF/yr 262,800 MMBtu/hr 3.4 tons sawdust/hr |
| 27 Natural Gas | AP-42, 1.4 | NO _x = 0.27 lb/MMBtu Various HAPs | - | - | 31.6 MMBtu/hr |
| 25, 28, 31 Diesel Fuel | AP-42, 1.3 | SO ₂ = 7.1 lb/1000 gal NO _x = 20 lb/1000 gal CO = 5 lb/1000 gal PM = 2 lb/1000 gal VOC = 1.1 lb/1000 gal | - | - | Max diesel usage 15 gal/hr 360 gal/yr |
| 25, 28, 31 Sawdust | AP-42, 1.6 | PM = 0.33 lb/MMBtu PM ₁₀ = 0.29 lb/MMBtu PM _{2.5} = 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 Various HAPs | - | - | 8.8 MMBtu/hr 4382 Btu/lb 2000 lb/hour Max duration of startup = 24 hours Max 12 startups per kiln in a year Max hours of operation = 288 hour/yr per kiln |
| | GHG Mandatory Reporting Rule | CO ₂ = 206.7352 lb/MMBtu CH ₄ = 0.0158688 lb/MMBtu N ₂ O = 0.007934 lb/MMBtu | | | |
| 26 | NSPS III Tier 3 Limit | PM/PM ₁₀ = 0.15 g/bhp-hr NO _x = 3.0 g/bhp-hr CO = 2.6 g/bhp-hr | - | - | 175 bhp 1.47 MMBtu/hr 500 hr/yr |
| | AP-42, 3.3-2 | VOC = 0.36 lb/MMBtu SO ₂ = 0.29 lb/MMBtu Various HAPs | | | |

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

| SN(s) | Pollutant | Test Method | Test Interval | Justification For Test Requirement |
|------------|------------------|-------------|---|---|
| 23 (DPK#1) | PM ₁₀ | 5 | One time (performed on February 28, 2018) | Dept. Guidance (Test for Emission Verification) |
| | CO | 10 | | |
| 30 (DPK#2) | PM ₁₀ | 5 | One time | Dept. Guidance (Test for Emission Verification) |
| | CO | 10 | | |

| SN(s) | Pollutant | Test Method | Test Interval | Justification For Test Requirement |
|------------|------------------|-------------|---|--|
| 27 (DPK#3) | PM ₁₀ | 201/201A | One time (performed on October 2, 2018) | Dept. Guidance (Test for Emission Verification) |
| | CO | 10 | | |

15. 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 | | | | |

16. 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) |
|---------|--|--|---|--------------|
| 20 | Wet Suppression Application | As needed to control visible emissions from traffic | As needed but no less than once a month | N |
| | Products Transported | <u>in tons of product per consecutive 12 months</u> Logs: 920,000 Finished Lumber: 261,535 | Monthly | Y |
| 21 | Planer Mill Hours of Operation | 3,600 hours per consecutive 12 months | Monthly | Y |
| 23 & 25 | Lumber Throughput | 71.61 MMBF per consecutive 12 months | Monthly | Y |
| 27 & 28 | Lumber Throughput | 75.0 MMBF per consecutive 12 months | Monthly | Y |
| 30 & 31 | Lumber Throughput | 93.5 MMBF per consecutive 12 months | Monthly | Y |
| 25 | Diesel fuel usage limit as starter fluid | 360 gallons per consecutive 12 months | Daily when in startup | N |
| | Abort stack operating hours | 288 hours per consecutive 12 months | Monthly | Y |
| | Sawdust | 2000 lb of sawdust per hour | Daily when | N |

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|----|--|---------------------------------------|-----------------------|--------------|
| | throughput limit for gasifier/burner | | in startup | |
| 28 | Diesel fuel usage limit as starter fluid | 360 gallons per consecutive 12 months | Daily when in startup | N |
| | Abort stack operating hours | 288 hours per consecutive 12 months | Monthly | Y |
| | Sawdust throughput limit for gasifier/burner | 2000 lb of sawdust per hour | Daily when in startup | N |
| 31 | Diesel fuel usage limit as starter fluid | 360 gallons per consecutive 12 months | Daily when in startup | N |
| | Abort stack operating hours | 288 hours per consecutive 12 months | Monthly | Y |
| | Sawdust throughput limit for gasifier/burner | 2000 lb of sawdust per hour | Daily when in startup | N |
| 26 | Hours of Operation | 500 hours per calendar year | Monthly | Y |

17. OPACITY:

| SN | Opacity % | Justification for limit | Compliance Mechanism |
|------------|-----------|-------------------------|---|
| 06 | 20 | Reg.19.503 | Weekly observation |
| 20 | 5 | Reg.18.501 | Weekly observation |
| 21 | 5 | Reg.18.501 | Monthly observation |
| 23, 27, 30 | 20 | Reg.19.503 | Weekly observation |
| 25, 28, 31 | 20 | Reg.19.503 | Observation during Startup |
| 26 | 20 | Reg.19.503 | Daily Observation when use exceeds 24-hours per event |

18. DELETED CONDITIONS:

| Former SC | Justification for removal |
|-----------|---|
| 18 | Throughput limit for SN-06 is redundant with the throughput limit for SN-20 because all logs coming into the facility will be processed by the Sawmill. |

19. 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 |
| Bark storage pile | A-13 | 0.95 | 0.47 | | | | | | |
| Sawdust storage pile | A-13 | 1.08 | 0.54 | | | | | | |
| Boiler ash (Biochar) storage Pile | A-13 | 1.44 | 0.72 | | | | | | |
| Chip Overflow Pile | A-13 | 0.83 | 0.41 | | | | | | |
| Planer Mill Woodwaste storage bin | A-13 | 0.083 | 0.007 | | | | | | |
| Fuel Storage Silo | A-13 | 0.143 | 0.012 | | | | | | |
| Chip Storage Bin | A-13 | 0.132 | 0.013 | | | | | | |
| 1,000 Gasoline tank | A-13 | | | | 0.67 | | | | |
| Parts Washer | A-13 | | | | 0.01 | | | | |
| Planer Mill Trim Cyclone | A-13 | 0.27 | 0.27 | | | | | | |
| A-13 Total | | 4.928 | 2.442 | | 0.68 | | | | |
| 500 gallon diesel tank | A-3 | | | | 0.01 | | | | |
| 1000 gallon diesel tank | A-3 | | | | 0.01 | | | | |
| 1000 gallon diesel tank | A-3 | | | | 0.01 | | | | |

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

| |
|--------------|
| Permit # |
| 1681-AOP-R18 |

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Anthony Forest Products Company
 Permit Number: 1681-AOP-19
 AFIN: 70-00473

| | | | |
|---------------|--------------|-----------------------------------|-------|
| \$/ton factor | 23.93 | Annual Chargeable Emissions (tpy) | 618.5 |
| 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) | 1.4 |
| 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 | | 57.9 | 59.3 | 1.4 | 1.4 | 59.3 |
| PM ₁₀ | | 26.4 | 26.6 | 0.2 | | |
| PM _{2.5} | | 0 | 0 | 0 | | |
| SO ₂ | | 10.1 | 10.1 | 0 | 0 | 10.1 |
| VOC | | 456.8 | 456.8 | 0 | 0 | 456.8 |
| CO | | 230.1 | 230.1 | 0 | | |
| NO _x | | 92.3 | 92.3 | 0 | 0 | 92.3 |
| Lead | <input type="checkbox"/> | 1.84E-02 | 1.84E-02 | 0 | | |

