COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Blue Ridge Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

ArborTech Forest Products
500 Dearing Ave, Blackstone, Virginia 23824
Permit No. BRRO-31039

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, ArborTech Forest Products has applied for a Title V Operating Permit for its Blackstone facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Permit Contact: _____ Date: 12/9/16
Blake Apo
(434) 582-6252

Air Permit Manager: _____ Date: 12/13/16
David J. Brown

Regional Director: _____ Date: 12/7/16
Robert J. Weld

FACILITY INFORMATION

Permittee
ArborTech Forest Products, Inc.
500 Dearing Ave.
Blackstone, VA 23824

Facility
ArborTech Forest Products, Inc.
500 Dearing Ave.
Blackstone, VA 23824

County-Plant Identification Number: 51-135-00037

SOURCE DESCRIPTION

NAICS Code 321113 – A dimensional lumber manufacturing facility (pine lumber) and by-products (i.e., bark, chips, sawdust, and shavings). Yellow pine logs are de-barked, rough cut into lumber, sorted and stacked. The lumber is kiln dried prior to trimming and planing. The finished product and by-products are stored and shipped.

The facility is a Title V major source of carbon monoxide and volatile organic compounds. This source is located in an attainment area for all pollutants, and is a PSD minor source. The facility is currently permitted under the October 4, 2007 minor NSR Permit, and a Title V permit dated October 24, 2010, that remains effective through the application shield provision of 9 VAC 5-80-80 F.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility are listed in Emission Units table on page 2 of the Title V permit.

EMISSIONS INVENTORY

A copy of the 2015 annual emission update is attached. Emissions are summarized in the following tables.

2015 Actual Emissions

	2015 Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO_2	PM_{10}	NO_x
Total	145.37	54.92	4.32	32.95	54.43

2015 Facility Hazardous Air Pollutant Emissions

Pollutant	**2015 Hazardous Air Pollutant Emission in Tons/Yr**
Methanol	8.60
Hydrogen chloride	2.09
Formaldehyde	1.03

EMISSION UNIT APPLICABLE REQUIREMENTS

The following section discusses requirements for the emission units at the facility that are subject to Title V permitting. These requirements come from the October 4, 2007 NSR Permit, and applicable state and federal requirements. The conditions are not repeated verbatim from the permit. The regulatory authority for each condition is listed in parentheses () below each condition in the permit.

Two wood-fired boilers rated at 28.7 MMBtu/hr (B1 and B2) and one distillate oil-fired boiler rated at 9.9 MMBtu/hr (B3)

Limitations

Limitations for the identical wood-fired boilers rated at 28.7 MMBtu/hr (B1, B2) are derived from the October 4, 2007 NSR permit.

B1 and B2 are approved to combust wood and required to maintain a minimum exhaust stack height. Both wood fired boilers are subject to State BACT[1] for PM which requires a

[1] State BACT is defined according to 9VAC5-50-240.

multicyclone control device that limits PM and PM10 emissions to 0.3 lbs/MMBtu and a 20% opacity limit.[2] Additionally, B1 and B2 are subject to emissions limits for SO2, NOx, VOCs, and CO. The June 30, 2000 permit approval determined State BACT for CO, SO2, and VOCs to be no controls. The August 17, 2006 NSR permit approval determined State BACT for NOx to be no controls.

B3 requirements were derived from 9 VAC 5 Chapters 40, 50, and 80.[3] The distillate oil fuel approval for B3, as requested by the June 2, 2002 application, is incorporated per 9 VAC 5-80-110. The emission limitations for PM and SO_x were derived from 9 VAC 5 Chapter 40 (existing stationary sources) as applicable per 9 VAC 5 Chapter 50 (new and modified stationary sources) provision 9 VAC 5-50-10 D. The opacity limitation of 20% was derived from 9 VAC 5-50-80.

B1, B2, and B3 are affected sources of the 40 CFR 63 Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (MACT 6J). B1 and B2 are within the Biomass subcategory and B3 is within the Oil subcategory of MACT 6J. The boilers (B1, B2, B3) are subject to the same requirements of MACT 6J and the applicable requirements are included in the permit. The applicable Initial Notification, Notification of Compliance Status, initial performance tune-ups, and one-time energy assessment have been satisfied and copies of the compliant submittals are included in the Title V renewal application. The boilers are not subject to emission limits or operating limits of MACT 6J. The boilers are required to perform biennial performance tune-ups and to be operated in a manner consistent with safety and minimizing emissions. Notifications are required to be submitted if any of the boilers switch fuel or make a physical change that affects MACT 6J applicability.

Monitoring and Recordkeeping

The permit requires annual internal inspections of each multicyclone (B1A, B2A) for structural integrity. Daily observations for visible emissions (VE) are required to be performed and documented for each boiler (B1, B2, B3) to satisfy the current sufficiency of monitoring precedent.

The permit includes requirements for maintaining records of fuel throughputs[4], fuel oil supplier certifications, boiler operator training, boiler operating procedures and maintenance schedules, emission calculations, annual cyclone inspections, VE logs, malfunctions, and MACT 6J notifications and records.

Based on engineering assessment and performance test results of similar units provided in the June 20, 2000 permit application, properly operated and maintained wood fired boilers

[2] BACT for PM from B1 was established by the June 30, 2000, permit approval. The B1 BACT determination methodology was applied to B2 by the August 27, 2002 permit approval.
[3] B3 was determined to be exempt from Article 6 permitting by the August 27, 2002 approval.
[4] Wood fuel throughput records for B1 and B2 satisfy NSPS Dc recordkeeping requirements.

combusting the approved fuel and controlled by a multicyclone are expected to comply with the emission limits and opacity limits of the permit. Demonstrating proper operation and maintenance of B1 and B2 through performance tune-ups, recordkeeping of proper operator training, operating procedures, and maintenance schedules combined with daily VE observations, annual multicyclone inspections, and monthly emission calculations is considered monitoring sufficient to assure compliance with the B1 and B2 limits.

Fuel supplier certifications for distillate oil (ASTM 1 or 2) documents the fuel to have no more than 0.5% sulfur by weight. The indirect limit on sulfur content allows for emission estimates that demonstrate compliance with the B3 SO2 emission limit.[5] B3 PM emissions have been estimated to be less than the permitted limit.[6] Properly operated and maintained B3 combusting distillate oil is expected to meet the limits of this permit. Conducting performance tune-ups and operator training; maintaining operating procedures, maintenance schedules, and fuel certifications; and daily VE observations is considered monitoring sufficient to assure compliance.

Streamlined Requirements
NSR Condition 8 (NSPS Dc general reference) was omitted as all applicable NSPS Dc requirements are included in Title V Condition 15.
NSR conditions 15.a and 15.b (B1 and B2 wood throughput records) were combined by Title V Condition 15.a.
MACT 6J requirements not included because they have already been satisfied are 63.11201(b) (energy assessments), 63.11214(b) (initial boiler tune-ups), and 63.11225(a) (Initial Notification and Notification of Compliance Status).

Kilns (K1, K2, K3) and Planar System (P1)

Limitations
Limitations for the kilns (K1, K2, K3) and planar system (P1) are derived from the underlying October 4, 2007 NSR permit. The kilns and P1 are subject to a wood throughput limit.

The kilns are subject to a VOC emission limit that represents State BACT.[7] A 20% opacity limitation applies to each kiln.

The P1 is subject to a PM emission limit, 5% opacity limit, and is required to be controlled by a

[5] SOx emission factor from AP 42, Section 1.3, Fuel Oil Combustion, Table 1.3-1, 5/10, is 142S lb per 1000 gallons combusted, where S is the % sulfur (by wt). SOx maximum hourly emissions: (142 lb_{SOx}/kgal x 0.5%S x 9.9MMBtu/hr) / (140,000 Btu/gal) = 5.02 lb/hr; SO2 permitted emission limit = 26.14 lb/hr.
[6] PM emission factor from AP 42, Section 1.3, Fuel Oil Combustion, Table 1.3-1, 5/10, is 2 lb per 1000 gallons combusted. Estimated PM emissions = (2 lb PM/kgal) / (138,000 Btu/gal x 1000 gal) = 0.014 lb/MMBtu; PM emission limit = 0.6 lb/MMBtu
[7] The October 4, 2007 permit approval established the VOC emission limit and no controls as State BACT.

cyclone. These requirements represent State BACT for PM.[8]

Monitoring and Recordkeeping
An annual internal inspection for structural integrity is required to be performed on the cyclone (P1A) controlling the P1. The kilns and P1 are required to conduct and document daily VE observations.

Records to be maintained include wood throughput totals through kilns, wood throughput totals through P1, emission calculations from kilns and P1, VE logs, annual inspection cyclones, scheduled and unscheduled maintenance, operator training, and all performance tests.

Due to the difficulty of emission testing dry kilns[9] and no VOC controls required for the kilns, periodic monitoring performed through recordkeeping of wood throughput and emission calculations are monitoring sufficient to assure compliance. Additionally, daily VE observations are required to demonstrate compliance with the opacity limit.

The PM emission estimates required to be calculated on a rolling 12 month basis for the P1 include a control factor from the cyclone and wood throughput totals. The requirement to maintain wood throughput totals and perform annual inspections of the cyclone to ensure proper performance supports the accuracy of the PM emission estimates. The opacity limit establishes another indicator of proper PM emission controls. Therefore, performing annual cyclone inspections, maintaining wood throughput totals, conducting PM emission calculations, and performing daily VE observations of the cyclone stack is monitoring sufficient to assure compliance.

Streamlined Requirements
None

Facility Wide Conditions

The limitations of this section are derived from the underlying permit. Maintenance schedules, spare parts, written operating procedures, and proper training of operators is required to be conducted and documented for all air pollution control equipment and process equipment that affect air emissions. Additionally, the facility is required to be constructed to allow for proper emission testing.

Streamlined Requirements

---

[8] The August 27, 2002 permit approval established the PM emission limit and cyclone control devices as State BACT (fabric filter controls were found to be cost prohibitive).
[9] Difficulty in monitoring dry kilns is well documented in background documents for the PCWP MACT. See 71FR8347 (PCWP MACT Final Rule) and 70FR44012 (PCWP MACT Proposed Rule).

NSR Condition 5 (fugitive dust controls) was not included because the fugitive dust requirements are covered by Title V Condition 54.
NSR Condition 17 (modification notification) was omitted because the modification approval is no longer valid per 9 VAC 5-80-1210.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and □§10.1-1185 of the *Code of Virginia,* and the "Department of Environmental Quality Agency Policy Statement No. 2-09".

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

J. Permit Modification

This general condition cites the sections that follow:
9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources
9 VAC 5-80-190. Changes to Permits.
9 VAC 5-80-260. Enforcement.
9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources
9 VAC 5-80-1605. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas
9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications

Locating in Nonattainment Areas

Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

FUTURE APPLICABLE REQUIREMENTS

None

INAPPLICABLE REQUIREMENTS

40 CFR 63 Subpart DDDD, National Emission Standards for Hazardous Air Pollutant for Plywood and Composite Wood Products (MACT DDDD) regulates emissions from lumber drying kilns at major sources. ArborTech is not a major source of HAPs, therefore kilns K1, K2, and K3 are not subject to this standard.

40 CFR 64 Compliance Assurance Monitoring (Part 64) does not apply to any of the emission units. All emission units have a potential pre-control device emission rate less than the applicable major source threshold for regulated air pollutants. The planar system was found to have the uncontrolled potential to exceed the major source threshold for PM. However, PM is not a regulated air pollutant under Title V or Part 64 but is a surrogate for the regulated air pollutants, PM-10 and PM-2.5, if needed. The planar system PM-10 and PM2.5 uncontrolled potential emissions were quantified and found to be less than the major source threshold.

9 VAC 5-40-2250 et seq. (Emission Standards for Woodworking Operations (Rule 4-17)) does not apply to this facility. Per 9 VAC 5-40-10 B, (Rule 4-17) does not apply to stationary sources constructed after March 17, 1972, unless Chapter 40 specifically states otherwise, or the provisions of Chapter 40 are more stringent than the requirements of Chapter 50, Chapter 80 or any permit issued under Chapter 80. The facility commenced construction on October 14, 2002 and Chapter 40 does not include language which establishes an alternative applicability date. In addition, the requirements of Chapter 50 and the October 4, 2007 minor NSR permit are more restrictive than Rule 4-17.[10]

There are no applicable GHG permitting requirements.

---

[10] The standard for PM (9 VAC 5-40-2270 B) of no more than 0.05 grains per standard cubic feet equates to 23.57 lbs of PM/hr (0.05 grains of PM/ft^3 x 1 lb/7000 grains x 55,000 acfm/min x 60 min/hr = 23.57 lbs/hr). Given the cyclone is controlling a planar system that processes kiln dried lumber, the actual volume of the cyclone exhaust gas is assumed to be similar to the standard volume.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720B)	Rated Capacity (9 VAC 5-80-720C)
T1	10,000 gallon above ground distillate oil tank	9 VAC 5-80-720 B	VOC	---
---	Green wood sawmill	9 VAC 5-80-720 B	PM	---

The citation criteria for insignificant activities are as follows:
9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
9 VAC 5-80-720 B - Insignificant due to emission levels
9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

None

PUBLIC PARTICIPATION

The proposed permit will be placed on public notice in the Blackstone Courier Record from October 27, 2016 to November 28, 2016.