



Louisville Metro Air Pollution Control District  
701 West Ormsby Avenue, Suite 303  
Louisville, Kentucky 40203-3137



**13 December 2017**

## **Title V Statement of Basis**

**Owner:** Brown-Forman Corporation

**Source:** Brown-Forman Cooperage

**Plant Location:** 402 MacLean Ave, Louisville, Kentucky 40209

**Date Application Received:** 12/05/2016

**Date Admin Complete:** 01/09/2017

**Date of Draft Permit:** 10/26/2017

**Date of Proposed Permit:** 10/26/2017

**District Engineer:** Shannon Hosey

**Permit No:** O-0026-17-V

**Plant ID:** 0026

**SIC Code:** 2449

**NAICS:** 32192

### **Introduction:**

This permit will be issued pursuant to: (1) Regulation 2.16, (2) Title 40 of the Code of Federal Regulations Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

This permit is an operating permit renewal.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), 1 hr and 8 hr ozone (O<sub>3</sub>), particulate matter less than 10 microns (PM<sub>10</sub>); and unclassifiable for the 2012 standard for particulate matter less than 2.5 microns (PM<sub>2.5</sub>) and partial non-attainment area for sulfur dioxide (SO<sub>2</sub>).

### **Application Type/Permit Activity:**

- Initial Issuance
- Permit Revision
  - Administrative
  - Minor
  - Significant
- Permit Renewal

### **Compliance Summary:**

Compliance certification signed

Compliance schedule included

[ ] Source is out of compliance

[X] Source is operating in compliance

**I. Source Information**

1. **Product Description:** Manufacture of white oak barrels for liquor maturation.
2. **Process Description:** Brown-Forman Cooperage production of white oak barrels involves six major production processes including: drying operations, barrel stave operations, head stave operation, char operations, steam generation, and barrel coating and sealing operations.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent to this facility.
4. **Emission Unit Summary:**

Emission Unit	Equipment Description
U2	Barrel and Head Production and Finishing Operations
U3	Barrel and Head Charring Operations
U4	Glue Application and Operations
U5	Power/Steam Generation System
U6	Barrel Coating and Sealing Operations
U8	Barrel Toasting Operations
U9	Fine Dust Boxes
IA1	Cold Solvent Parts Cleaner (Non-Halogenated)

5. **Fugitive Sources:** The fugitive sources identified by the source are uncontrolled portions from barrel toasting and steam heated air drying process kilns.
6. **Permit Revisions:**

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
N/A	135-97-TV	01/22/2001	10/22/2000	Initial	Entire Permit	Initial Permit Issuance
R1	135-97-TV (R1)	04/16/2012	02/26/2012	Renewal	Entire Permit	5 year renewal and incorporating construction permits # 180-04-C, 181-04-C, 335-05-C, 363-07-C, 363-07-C (R1), 364-07-C (R1), 573-08-C, 118-09-C, 202-09-C,

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
						123-10-C and 32864-11-C
R2	135-97-TV (R2)	04/27/12	02/26/12	Admin Change	Cover Page	Correct dates
R3	135-97-TV (R3)	10/09/2015	N/A	Admin Change	Entire Permit	Incorporating construction permit # C-0026-1000 (R1)
R4	135-97-TV (R4)	02/17/2016	N/A	Admin Change	Entire Permit	Incorporating construction permit #C-0026-1000-16-V (R2)
N/A	O-0026-17-V	12/13/2017	10/26/2017	Renewal	Entire Permit	Renewal

#### 7. Construction Permit History:

Permit No.	Effective Date	Description
C-0026-1000	09/24/2014	Modifying the dust handling system by redistributing the load to the five existing baghouses.
C-0026-1000 (R1)	09/24/2014	Corrected the general reporting requirements.
C-0026-1000-16-V (R2)	11/28/2016	Correcting the capacity of the process cyclones listed in Permit No.: C-0026-1000 (R1) which modified the dust handling system by redistributing the load to the five existing baghouses in EU U2, Barrel and Head Production and Finishing Operations.

#### 8. Permit Renewal-Related Documents:

Document Number	Date Received	Description
83619	4/13/2017	Certificate of Authorization
80725	12/05/2016	Title V renewal application
78774	8/01/2016	Compliance Assurance Monitoring Plan (CAM) Revision
77688	06/08/2016	AP-100A to correct capacities of process cyclones
66606	08/20/2014	AP-100A to modify the dust handling system
36797	03/22/2012	EA Demo for changes made to BAC
4828	10/14/2009	Compliance Assurance Monitoring Plan (CAM)_
29932	08/05/2009	Barrel char STAR analysis
51092	01/03/2007	Category 1 TAC EA Demo

Document Number	Date Received	Description
75659	06/19/2003	BACT analysis for barrel toasting

**9. Emission Summary:**

Pollutant	District Calculated Actual Emissions (tpy) 2016 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	52.61	Yes
NO <sub>x</sub>	30.88	Yes*
SO <sub>2</sub>	1.63	No
PM <sub>10</sub>	24.34	Yes
VOC	11.01	No
Total HAPs	2.58	No
Single HAP > 1 tpy		
Hydrogen Chloride	1.21	No

\* The source has the potential to exceed 100 tpy of NO<sub>x</sub>, however a plant-wide limit was taken to avoid NO<sub>x</sub> RACT.

**10. Applicable Requirements:**

PSD       40 CFR 60       SIP       40 CFR 63  
 NSR       40 CFR 61       District-Origin       Other

**11. Referenced MACT Federal Regulations:**

40 CFR 63 Subpart JJJJJ National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

**12. Referenced non-MACT Federal Regulations:**

40 CFR 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

40 CFR 64 Compliance Assurance Monitoring for Major Stationary Sources

## II. Regulatory Analysis

1. **Acid Rain Requirements:** Brown-Forman Cooperage is not subject to the Acid Rain Program.
2. **Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. Brown-Forman Cooperage does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
3. **Prevention of Accidental Releases 112(r):** Brown-Forman Cooperage does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, Chemical Accident Prevention Provisions, in a quantity in excess of the corresponding specified threshold amount.
4. **40 CFR Part 64 Applicability Determination:** Brown-Forman Cooperage is subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*.
5. **Basis of Regulation Applicability:**

- a. **Plantwide**

Brown-Forman Cooperage is a potential major source for the pollutant CO, NO<sub>x</sub> and PM<sub>10</sub>. Regulation 2.16-*Title V Operating Permits* establishes requirements for major sources. Brown-Forman Cooperage has taken a less than 100 ton limit during any consecutive 12-month period limit in order to stay below NO<sub>x</sub> RACT applicability threshold.

Regulations 5.00 5.20, 5.21, and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. Brown-Forman submitted their TAC Environmental Acceptability Demonstration to the District on January 3, 2007, January 14, 2008, and March 22, 2012. Compliance with the STAR EA Goals was demonstrated in the source's EA Demonstrations. SCREEN3 air dispersion modeling was performed for each emission unit that has non-*de minimis* TAC emissions. The carcinogen risk and non-carcinogen risk values, calculated using the District approved PTE for each unit and the SCREEN model results from the source's EA Demonstration, comply with the STAR EA goals required in Regulation 5.21.

**Table 1: Plantwide Risk**

<b>Plantwide Sum</b>	<b>All Existing and New Processes</b>		<b>All New Processes</b>	
Industrial Total $R_C$	4.53	< 75	0	< 38
Non-Ind. Total $R_C$	4.53	< 7.5	0.04	< 3.8
Industrial Max. $R_{NC}$	0.803	< 3.0		
Non-Ind. Max. $R_{NC}$	0.803	< 1.0		

**Table 2: Tier 3 Modeling Results**

EU	TAC	Risk ( $EAG_C$ )		HQ ( $EAG_{NC}$ )	
		Unadjusted Process	Industrial Process	Unadjusted Process	Industrial Process
		$EAG_C \leq 1.0$	$EAG_C \leq 10.0$	$EAG_{NC} \leq 1.0$	$EAG_{NC} \leq 3.0$
U3, Barrel Char E8 (uncontrolled)	Arsenic	0.60	0.60	0.0046	0.0046
	Benzene	0.20	0.20	0.0009	0.0009
	Chromium VI	0.27	0.27	0.0028	0.0028
	Formaldehyde	0.36	0.36	0.0091	0.0091
	Manganese	--	--	0.20	0.20
	1,2-Dibromoethane	0.04	0.04	0.0003	0.0003
	Acrolein	--	--	0.301	0.301
U3, Head Char E9 (uncontrolled)	Arsenic	0.597	0.597	0.0046	0.0046
U5, Boiler E12 (uncontrolled)	Arsenic	0.869	0.869	0.0067	0.0067
	Formaldehyde	0.605	0.605	0.016	0.016
	Benzene	0.342	0.342	0.0015	0.0015
	Chromium VI	0.458	0.458	0.0048	0.0048
	Cadmium	0.079	0.079	0.0022	0.0022
	Nickel	0.105	0.105	0.008	0.008
U4, Glue Operation, E10 and E11	Diethylene glycol monobutyl ether	--	--	0.25	--
<b>Plant-wide <math>R_C</math>: for new processes:</b>		<b>0.04 (<math>\leq 3.8</math>)</b>	<b>0.04 (<math>\leq 38.0</math>)</b>		
<b>Plant-wide <math>R_C</math>: for all processes:</b>		<b>4.53 (<math>\leq 7.5</math>)</b>	<b>4.53 (<math>\leq 75.0</math>)</b>		

The TAC emissions from the combustion of natural gas are considered to be “*de minimis* emissions” by the District. This includes all of the emissions from a process or process equipment for which the only emissions are the products of combustion of natural gas, such as from a natural gas-fired boiler or turbine, but does not include the other emissions from a process or process equipment that are not the products of the combustion of natural gas. (Regulation 5.21, section 2.7)

Regulation 2.16, section 4.1.9, requires monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a

minimum of 5 years and make the records readily available to the district upon request.

Regulation 2.16, section 4.3.5, requires stationary sources for which a Title V permit is issued to submit an annual compliance certification by April 15, of the following calendar year. In addition, as required by Regulation 2.16, section 4.1.9.3, the source shall submit a semi-annual compliance report to show compliance with the permit, by March 1 and August 29 of every year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.16, section 3.5.11.

b. **Applicable Regulations**

<b>Regulation</b>	<b>Title</b>	<b>Type</b>
2.05	Prevention of Significant Deterioration of Air Quality	SIP
2.16	Title V Operating Permits	SIP
5.00	Standards for Toxic Air Contaminants and Hazardous Air Pollutants	Local
5.01	General Provisions	SIP
5.02	Federal Emission Standards for Hazardous Air Pollutants Incorporated by Reference	Local
5.14	Hazardous Air Pollutants and Source Categories	Local
5.15	Chemical Accident Prevention Provisions	Local
5.20	Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant	Local
5.21	Environmental Acceptability for Toxic Air Contaminants	Local
5.22	Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant	Local
5.23	Categories of Toxic Air Contaminants	Local
6.09	Standards of Performance for Existing Process Operations	SIP
6.18	Standards of Performance for Solvent Metal Cleaning Equipment	SIP
6.24	Standard of Performance for Existing Sources Using Organic Materials	SIP
7.06	Standards of Performance for New Indirect Heat Exchangers	SIP
7.08	Standards of Performance for New Process Operations	SIP
7.25	Standard of Performance for New Sources Using Volatile Organic Compounds	SIP
40 CFR 64	Compliance Assurance Monitoring	Federal
40 CFR 60 Subpart A	General Provisions	Federal
40 CFR 60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	Federal

<b>Regulation</b>	<b>Title</b>	<b>Type</b>
40 CFR 63 Subpart A	General Provisions	Federal
40 CFR 63 Subpart JJJJJ	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources	Federal

c. **Basis for Applicability**

<b>Regulation</b>	<b>Basis for Applicability</b>
2.16	Title V source
5.00	Establishes definitions of terms used in the Strategic Toxic Air Reduction Program.
5.01	Establishes general provisions for process equipment from which a toxic air contaminant is or may be emitted.
5.02	Adopts and Incorporates by Reference of National Emission Standards for Hazardous Air Pollutants
5.20	Establishes the methodology for determining the benchmark ambient concentration of a toxic air contaminant.
5.21	Establishes the criteria for determining the environmental acceptability of emissions of toxic air contaminants.
5.22	Establishes the procedures for determining the maximum ambient concentration of a toxic air contaminant.
5.23	Establishes categories of toxic air contaminants.
6.09	Applies to each process operation that is not otherwise regulated by any other portion of Regulation 6 and was in existence or had a construction permit issued by the District by September 1, 1976.
6.18	Applies to cold cleaners.
6.24	Establishes VOC standards for affected facilities constructed before June 13, 1979.
7.06	Applies to each indirect heat exchanger having input capacity of more than one million BTU per hour commenced after September 1, 1976.
7.08	Applies to equipment installed after September 1, 1976 subject to the PM emission standard.
7.22	Applies to loading facilities which load more than 200 gallons of "volatile organic materials" into tank trucks, trailer, or railroad tank cars in any one day, commencing after June 13, 1979.
7.25	Applies to affected facility constructed after June 13, 1979 for VOC control.
40 CFR 64	Applies to each pollutant specific emission unit that is subject to an emission limitation or standard; uses a control device to achieve compliance; and has pre-control emissions that exceed or are equivalent to the major source threshold.
40 CFR 60 Subpart A	General Provisions



Regulation	Basis for Applicability
40 CFR 60 Subpart Dc	Applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h)
40 CFR 63 Subpart A	Regulates specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants.
40 CFR 63 Subpart JJJJJ	Applies to each industrial, commercial, or institutional boiler that is located at, or is part of, an area source of hazardous air pollutants (HAP). An affected source is a new source if you commenced construction of the affected source after June 4, 2010 or an existing source if before.

d. **Emission Unit U2 – Barrel and Head Production and Finishing Operations**

i. **Equipment:**

Emission Point	Capacity	Control ID	Applicable Regulation
E1: Conveyance from Woodworking 1 equipment consisting of #2 Head Line Planer, Narrow Head Line Planer, Narrow Head Line Edger, Rounder & Scrap Grinder, Finish Head Planer, Stave Jointers (for 3-1 through 3-2 Stave Lines), Heading Jointer (for 2-1 through 2-3 Stave Lines), Head Rounder #1 and Head Rip Saw to process cyclone #1	6726 tons/yr	B1	STAR, 40 CFR 64, 7.08
E2: Conveyance from Woodworking 2 equipment consisting of #1 & #2 Stave Line Equalizer, Stave Rip Saw, #1 & #2 Stave Line Planer and Jointer (for 1-1 through 1-5 & 2-3 through 2-5 Stave Lines) to process cyclone #2	11,476 tons/yr	B2	
E3: Conveyance from Woodworking 3 equipment consisting of #3 Stave Line Planer, #3 Stave Line Equalizer, Head Rounder #2, Head Jointer (for 1-1 through 1-3 Stave Lines), Jointer (for 2-1 through 2-2 and 3-3 through 3-5 Stave Lines) and Head Line Planer #1 to process cyclone #3	8976 tons/yr	B3	
E4: Conveyance from Woodworking 4 equipment consisting of Wood Hog for Equalizer, Head Line Wood Hog for Rounders, and Truck Load-out to process cyclone #4	4404 ton/yr	B4	

Emission Point	Capacity	Control ID	Applicable Regulation
E5: Conveyance from Woodworking 5 equipment consisting of South Wood Hog and West Wood Hog to process cyclone #5	2459 tons/yr	B5	

Control ID	Description	Control Efficiency	Stack ID
B1	One (1) Donaldson Torit pulse-jet baghouse to control E1	99.9%	S1
B2	One (1) Carter Day baghouse to control E2	98.3%	S2
B3	One (1) Donaldson Torit pulse-jet baghouse to control E3	99.5%	S3
B4	One (1) Carter Day baghouse to control E4	99.9%	S4
B5	One (1) Carter Day baghouse to control E5	99.2%	S5

ii. **Standards/Operating Limits**

1) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

2) **PM/PM<sub>10</sub>**

Regulation 7.08, section 3.1.2 sets forth PM emission limits for new processes. The emission rate is based on the mass of the material used in the process.

e. **Emission Unit U3 – Barrel and Head Charring Operations**

i. **Equipment:**

Emission Point	Installation Date	Control ID	Applicable Regulation
E8: Barrel Charring Operation	1958	C6	STAR, 6.09, 6.42
E9: Head Charring Operation	1955	N/A	

Control ID	Description	Performance Indicator	Stack ID
C6	Venturi Wet Scrubber in series with Wet Electrostatic Precipitator	N/A	S-7

ii. **Standards/Operating Limits**

1) **NO<sub>x</sub>**

Regulation 6.09, section 4.1 requires NO<sub>x</sub> fumes shall not exceed 300 ppm by volume expressed as NO<sub>2</sub>. Using AP-42 emission factors for combustion of natural gas, the NO<sub>x</sub> emission standard cannot be exceeded

2) **Opacity**

Regulation 6.09, section 3.1 establishes an opacity standard of less than 20%.

3) **PM/PM<sub>10</sub>**

Regulation 6.09, section 3.2 sets forth PM emission limits for existing processes. The emission rate is based on the mass of the material used in the process.

f. **Emission Unit U4 – Glue Application and Operations**

i. **Equipment:**

Emission Point	Installation Date	Control ID	Applicable Regulation
E10: Wood Glue Operations (Clamp Carrier)	1980	N/A	STAR, 6.24
E11: Glue Applicator			

ii. **Standards/Operating Limits**

**VOC**

Regulation 6.24 limits the pound per hour and pound per day emissions of Class III solvents.

g. **Emission Unit U5 – Power/Steam Generation System**

i. **Equipment:**

Emission Point	Capacity	Control ID	Applicable Regulation
E12: One (1) Wood-Fired Boiler	42 MMBtu/hr, installed in 1967	C11	6.07, 6.42, 40 CFR 63 Subpart JJJJJ

<b>Emission Point</b>	<b>Capacity</b>	<b>Control ID</b>	<b>Applicable Regulation</b>
E13: Sawdust Storage Tank, Screw Conveyor, Cyclone	3300 lb/hr	C13	6.09
E14: One (1) Natural Gas Boiler	27 MMBtu/hr, installed in 1999	N/A	6.42, 7.06, 40 CFR 60 Subpart Dc
E21: Boiler feed hammermill	6000 lb/hr	C13	7.08
E22: Screw Conveyor	6000 lb/hr	N/A	7.08
E23: Weigh Conveyor	6000 lb/hr	N/A	7.08

ii. **Standards/Operating Limits**

1) **HAP**

40 CFR 63 Subpart JJJJJ establishes requirements for industrial, commercial, or institutional boilers at area sources.

2) **Opacity**

(a) Regulation 6.07, section 3.2 and 7.06, section 5.1.1 establishes an opacity standard of less than 20%.

(b) Regulation 6.09, section 3.1 and Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

3) **PM/PM<sub>10</sub>**

(a) The emission standard for PM is determined in accordance with Regulation 6.07, section 3.1 and 7.06, section 4.1.4.

(b) Regulation 6.09, section 3.2 sets forth PM emission limits for existing processes and Regulation 7.08 sets forth PM emission limits for new processes. The emission rate is based on the mass of the material used in the process.

4) **SO<sub>2</sub>**

(a) For Emission Point E12, the emission standard for SO<sub>2</sub> is determined in accordance with Regulation 6.07, section 4.1.

- (b) 40 CFR 60, Subpart Dc applies to boilers greater than or equal to 10 mmBtu.hr. However, there is no SO<sub>2</sub> emission standard for natural gas fired boilers in Subpart Dc.

**h. Emission Unit U6 – Barrel Coating and Sealing Operations**

**i. Equipment:**

<b>Emission Point</b>	<b>Installation Date</b>	<b>Control ID</b>	<b>Applicable Regulation</b>
E15: Barrel coating and sealing operations	1993	Filters	7.08, 7.25

**ii. Standards/Operating Limits**

**1) PM/PM<sub>10</sub>/PM<sub>2.5</sub>**

Regulation 7.08, section 3.1.2 sets forth PM emission limits for new processes. The emission rate is based on the mass of the material used in the process.

**2) VOC**

Regulation 7.25 establishes a plantwide VOC limit of 5 tons per year for all affected facilities, unless Best Available Control Technology (BACT) level of control is utilized to reduce the VOC emissions.

**i. Emission Unit U8 – Barrel Toasting Operations**

**i. Equipment:**

<b>Emission Point</b>	<b>Installation Date</b>	<b>Control ID</b>	<b>Applicable Regulations</b>
E17: Preheat oven	< 2001	N/A	STAR, 7.08, 7.25
E18: Infrared warmers			

ii. **Standards/Operating Limits**

1) **NO<sub>x</sub>**

Regulation 7.08, section 4.1 requires NO<sub>x</sub> fumes shall not exceed 300 ppm by volume expressed as NO<sub>2</sub>. Using AP-42 emission factors for combustion of natural gas, the NO<sub>x</sub> emission standard cannot be exceeded

2) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

3) **PM/PM<sub>10</sub>**

Regulation 7.08 sets forth PM emission limits for new processes. The emission rate is based on the mass of the material used in the process.

4) **VOC**

Regulation 7.25 establishes VOC emission limits through Best Available Control Technology BACT for emission Points E17 and E18.

j. **Emission Unit U9 – Fine Dust Boxes**

i. **Equipment:**

Emission Point	Control ID	Applicable Regulation
E24: Fully-enclosed 12" screw conveyor, conveyed to a roll-off box	N/A	7.08

ii. **Standards/Operating Limits**

1) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

2) **PM/PM<sub>10</sub>**

Regulation 7.08, section 3.1.2 sets forth PM emission limits for miscellaneous new processes. The emission rate is based

on the mass of the material used in the process.

k. **Emission Unit IA1 – Cold Solvent Parts Cleaner (Non-Halogenated)**

i. **Equipment:**

Emission Point	Installation Date	Control ID	Applicable Regulation
E16: 45 gallon parts washer with secondary reservoir	1995	N/A	6.18

ii. **Standards/Operating Limits**

**VOC**

Per Regulation 6.18, the owner or operator shall install, maintain, and operate the control equipment for Emission Points E16, shall observe specific operating requirements, and shall not operate a cold cleaner using a solvent with a vapor pressure that exceeds 1.0 mm Hg (0.019 psi) measured at 20°C (68°F).

**III. Other Requirements**

- 1. Temporary Sources:** The source did not request to operate any temporary facilities.
- 2. Short Term Activities:** The source did not report any short term activities.
- 3. Emissions Trading:** N/A
- 4. Alternative Operating Scenarios:** The source did not request any alternative operating scenarios.
- 5. Compliance History:**

Date	Regulation Violated	Settlement
10/14/1992	1.14 (Fugitive Visible Past Property Line)	Settled (2/17/1993)
4/8/1993	1.14 (Fugitive Building/Equipment)	Board (8/18/1993)
4/30/1993	1.14 (Fugitive Open Site)	Board (8/18/1993)
5/10/1993	1.14 (Fugitive Building/Equipment)	Board (8/18/1993)
5/27/1993	1.14 (Fugitive Building/Equipment)	Board (8/18/1993)
6/10/1993	1.14 (Fugitive Building/Equipment)	Board (8/18/1993)
9/14/1993	1.14 (Fugitive Building/Equipment)	Settled (11/12/1993)
8/13/1998	1.09 (Air Pollution General Prohibition)	Settled (10/12/1998)

Date	Regulation Violated	Settlement
8/22/2000	1.14 (Fugitive Building/Equipment)	Settled (12/5/2000)
4/15/2003	1.09 (Air Pollution General Prohibition)	Settled (4/8/2004)
11/20/2003	1.09 (Air Pollution General Prohibition)	Settled (4/8/2004)
11/28/2006	1.09 (Air Pollution General Prohibition)	Settled (1/29/2007)
8/31/2012	2.16 (Failure to Comply Title V permit)	Settled (4/3/2014)

#### 6. Calculation Methodology or Other Approved Method:

Generally, emissions are calculated by multiplying the throughput (ton, MMCF, gallons, etc) or hours of operation of the equipment by the appropriate emission factor and accounting for any control devices unless otherwise approved in writing by the District.

#### U2 Emission Points, Barrel and Head Production and Finishing Operations

Emission Point ID	Description	Control Device	Acceptable Emission Factor Sources
E1	Conveyance from Woodworking 1 equipment consisting of #2 Head Line Planer, Narrow Head Line Planer, Narrow Head Line Edger, Rounder and Scrap Grinder, Finish Head Planer, Stave Jointers (for 3-1 through 3-2 Stave Lines), Heading Jointer (for 2-1 through 2-3 Stave Lines), Head Rounder #1 and Head Rip saw to process cyclone #1 with capacity 6,726 tons/yr and a removal efficiency of 86%	B1, Donaldson Torit pulse-jet baghouse, control efficiency of 99.9%	All emission factors, process device and control device efficiencies are based on the study conducted by Kentuckiana Engineering in March of 2004 and taken from "BGC Louisville calculations 7-704.xls"  Emission factors are based on calculations conducted by the facility in March 2003 and submitted as part of the facility's 2003 Emission inventory report to APCD.
E2	Conveyance from Woodworking 2 equipment consisting of #1 & #2 Stave Line Equalizer, Stave Rip Saw, #1 & #2 Stave Line Planer and Jointer (for 1-1 through 1-5 & 2-3 through 25 Stave Lines) to process cyclone #2 with capacity 11, 476 tons/yr and removal efficiency of 94.0%	B2, baghouse, control efficiency of 98.3%	
E3	Conveyance from Woodworking 3 equipment consisting of #3 Stave Line Planer, #3 Stave Line Equalizer, Head Rounder #2, Head Jointer (for 1-1 through 1-3 Stave Lines), Jointer (for 2-1 through 2-2 and 3-3 through 3-5 Stave Lines) and Head Line Planer #1 to process cyclone #3 with capacity 8,976 tons/yr and a removal efficiency of 88.6%	B3, Donaldson Torit pulse-jet baghouse, control efficiency of 99.5%	
E4	Conveyance for Woodworking 4 equipment consisting of Wood Hog for Equalizer, Head Line Wood Hog for Rounders, and Truck Load-out to process cyclone #4 with capacity of 4,404 ton/yr and a removal efficiency of 99.3%	B4, Baghouse, control efficiency of 99.9%	
E5	Conveyance from Woodworking 5 equipment consisting of South Wood Hog and West Wood Hog to process cyclone #5 with capacity 2,459 tons/yr and a removal efficiency of 97.4%	B5, baghouse, control efficiency of 99.2%	



**U3 Emission Points, Barrel and Head Charring Operations**

Emission Point ID	Description	Control Device	Acceptable Emission Factor Sources
E8	Barrel Charring Operation	C6 — Venturi Wet Scrubber in series with Wet Electrostatic Precipitator	HAPs: AP-42 1.4-1  PM <sub>10</sub> = PM <sub>2.5</sub> = 0.18 lbs/hr (January 2011 Stack Test conducted by O'Brien and Gere) April 1999 Stack Test conducted by BHE Environmental: CO = 0.0474 lbs/barrel VOC = 0.0125 lbs/barrel  AP-42, 1.10-1, conventional wood stove: SO <sub>2</sub> = 0.4 lbs/ton NO <sub>x</sub> = 2.8 lbs/ton
E9	Head Charring Operation	N/A	HAPs: AP-42 1.4-1  AP-42, 1.10-1, conventional wood stove: SO <sub>2</sub> = 0.4 lbs/ton NO <sub>x</sub> = 2.8 lbs/ton  Engineering judgement is based upon the surface area ratio. The head's surface area is 21% of the barrel. PM = 0.0051 lbs/hr CO = 0.001 lbs/barrel VOC = 0.00265 lbs/barrel

**U4 Emission Points, Glue Application and Operations**

Emission Point ID	Description	Control Device	Acceptable Emission Factor Sources
E10	Wood Glue Operation	N/A	Emissions are based on the hours of production and VOC content of the glue.
E11	Glue Applicator Operation		

**U5 Emission Points, Steam Generation System**

Emission Point ID	Description	Control Device	Acceptable Emission Factor Sources
E12	One Wood-Fired Boiler rated at 42 MMBtu/hr, installed in 1967	C11 — Wet Scrubber	PM = 0.13 lb/MMBTU (Stack test conducted August 29, 2000 by Catalyst Air Management) CO, NO <sub>x</sub> , SO <sub>2</sub> , VOC and HAP (AP-42 1.6) PM <sub>10</sub> = PM <sub>2.5</sub> = 98% (PM), from AP-42, 1.6-5, with scrubber
E13, E21, E22 and E23	Sawdust Storage Tank, Screw Conveyor, Cyclone, Boiler feed hammermill rated at 6000 lb/hr, Screw Conveyor rated at 6000 lb/hr and Weigh Conveyor rated at 6000 lb/hr	C13 — Pulse-jet baghouse	<i>AIRS Facility Subsystem Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants</i> , EPA 450/4-90-003, SCC 3-07-008-03, "Sawdust Pile Handling, General" for Sawmill Operations: PM = 1 lbs/ton PM <sub>10</sub> = 0.36 lbs/ton AP-42, Appendix B1 % breakdown for woodworking waste PM <sub>2.5</sub> = 0.14 lbs/ton, controlled PM <sub>2.5</sub> = 0.30 lbs/ton, uncontrolled

Emission Point ID	Description	Control Device	Acceptable Emission Factor Sources
E14	One Natural Gas Boiler rated at 27 MMBtu/hr, installed in 1999	N/A	AP-42 1.4

**U6 Emission Points, Barrel Coating and Sealing Operations**

Emission Point ID	Description	Acceptable Emission Factor Sources
E15	Barrel coating and sealing operation	<p>Emissions are based on the hours of production and the barrel coating VOC and PM contents:</p> $VOC = (gal) \left( \frac{lb}{gal} \right) (\%VOC) \left( \frac{1 \text{ ton}}{2000 \text{ lb}} \right)$ $PM = (gal) \left( \frac{lb}{gal} \right) (\%PM) (1 - 65\% \text{ transfer efficiency}) (1 - 90\% \text{ filter}) \left( \frac{1 \text{ ton}}{2000 \text{ lb}} \right)$

**U8 Emission Points, Barrel Toasting Operations**

Emission Point ID	Description	Acceptable Emission Factor Sources
E17	Preheat oven	Emissions are based on the hours of production, contents of barrels and barrel heads toasted and natural gas combustion: AP-42 1.4-1
E18	Infrared warmers	

**U9 Emission Points, Fine Dust Boxes**

Emission Point ID	Description	Acceptable Emission Factor Sources
E24	Fully-enclosed 12" screw conveyor, conveyed to a dust storage box	<p><i>AIRS Facility Subsystem Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants</i>, EPA 450/4-90-003, SCC 3-07-008-03, "Sawdust Pile Handling, General" for Sawmill Operations:                      PM = 1.0 PM/ton                      PM10 = 0.36 lbs PM/ton                      PM2.5 = 0.295 lbs PM/ton (AP-42 Appendix B.1)</p>

**IA1 Emission Points, Cold Solvent Parts Cleaner**

Emission Point ID	Description	Acceptable Emission Factor Sources
E16	45 Gallons Parts Washer	Mass Balance

**7. Insignificant Activities:**

<b>Equipment</b>	<b>Quantity</b>	<b>PTE (tpy)</b>	<b>Basis for Exemption</b>
Miscellaneous wood working operations including: assembly crozier, bung hole drill, head stave dowel pin drill, head stave dowel pin drill, head stave tongue & groove ops, barrel router, equalizers, planers, jointers, edgers and head rounders <sup>1</sup>	4	-	Regulation 1.02, Appendix A, 3.5
Wood Drying Operation: 3 kilns installed in 1979 and 5 kilns installed in 1981 (U1)	8	VOC = 3.93	Regulation 1.02, Section 1.38.1.1
45 gallon parts washer with secondary reservoir (See Emission Unit IA1)	1	VOC = 0.09	Regulation 1.02, Appendix A, 3.22

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements pursuant to Regulation 2.16 section 3.5.4.1.4.
- 2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements as required by Regulation 2.16 section 4.1.9.4.
- 3) The Insignificant Activities Table is correct as of the date the permit was proposed for review by U.S. EPA, Region 4.
- 4) The owner or operator shall submit an updated list of insignificant activities that occurred during the preceding year pursuant to Regulation 2.16 section 4.3.5.3.6.
- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) to be reported on the annual emission inventory.
- 6) The District has determined pursuant to Regulation 2.16 section 4.1.9.4 that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.

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<sup>1</sup> These wood cuttings are too large to become airborne and instead are collected and fed directly through a material handling cyclone and on to the wood-fire boiler.

### Compliance Assurance Monitoring (CAM) Plan

**Emission Unit:** U2

**Emission Point:** E1, E2, E3, E4, and E5

**Applicable Regulation:** 7.08

**PM Emission Limit:** 3.05 lb/hr, 4.24 lb/hr, 3.64 lb/hr, 2.34 lb/hr and 2.34 lb/hr

**Control Device:** B1, B2, B3, B4 and B5

**Monitoring Approach:** The key elements of the monitoring approach are presented in the table below.

Parameter	Indicator 1	Indicator 2	Inspection Maintenance
Indicator [(64.6(c)(1)(i))]	Pressure Drop ( $\Delta P$ ) across baghouse	Visible Emissions	Daily pressure drop monitor across the baghouses
Measurement Approach [(64.6(c)(1)(ii))]	A pressure drop indicator shall be used to measure $\Delta P$ across the baghouse.	Visible emission surveys will be conducted on a monthly basis.	Monthly visual inspection of the structural and mechanical integrity of the dust collector. Weekly and Quarterly maintenance inspection as recommended by the manufacturer
Indicator Range [(64.6(c)(2))]	An excursion for the baghouse is defined as any operating condition where the $\Delta P$ is less than 1 inches H <sub>2</sub> O or greater than 6 inches H <sub>2</sub> O.	An excursion for visible emissions is defined as the presence of any visible emissions greater than 20% opacity.	
Bypass [(64.6(c)(2))]	If the $\Delta P$ falls below the 1 inches H <sub>2</sub> O, a possibility of a bypass is investigated.	--	
QIP Threshold [64.8]	Daily $\Delta P$ readings outside the performance indicator range for more than 3 times within a 1 month period	Visible emissions greater than 20% opacity for more than 3 times within a 1 month period	
Performance Criteria/data representativeness [64.6(c)(1)(iii)]	$\Delta P$ : Minimum acceptable accuracy of pressure drop indicator per manufacturer's specifications	Measurements are made at the exhaust stack	

Parameter	Indicator 1	Indicator 2	Inspection Maintenance
QA/QC Practices and Criteria [64.6(b)(3)]	$\Delta P$ : Visual inspection per permit conditions and routine maintenance per manufacturer's recommendations. Inspect and maintain per manufacturer's recommendations	The observer will be certified in Method 9 procedures.	
Monitoring Frequency [64.6(b)(4)]	$\Delta P$ monitored on a daily basis	Visible Emissions Survey conducted on a monthly basis	Monthly Inspection Records are maintained to document monthly visual inspection and any maintenance performed.
Data Collection Procedures [64.6(b)(4)(iii)]	Recorded on a daily basis	Recorded by observer on a monthly basis	
Record Keeping and Reporting [64.9]	Excursion reporting and corrective actions taken	--	
	Semi-annual Reports include: <ul style="list-style-type: none"> <li>• Investigation and corrective action report,</li> <li>• Date, time, and duration of excursion,</li> <li>• Cause of and corrective actions taken to eliminate excursion, and</li> <li>• Measures taken to prevent re-occurrence.</li> <li>• A description of the actions taken to implement a QIP (as applicable)</li> </ul>	Semi-annual Reports include: <ul style="list-style-type: none"> <li>• Investigation and corrective action report,</li> <li>• Date, time, and duration of excursion,</li> <li>• Cause of and corrective actions taken to eliminate excursion, and</li> <li>• Measures taken to prevent re-occurrence.</li> <li>• A description of the actions taken to implement a QIP (as applicable)</li> </ul>	

**Justification**

*Background:* The pollutant specific emission source control devices at the facility consist of a baghouse to control PM emissions from the conveyance of wood from the process cyclones.

*Rationale for Selection of Performance Indicators:* Pressure drop and visible emissions were selected as performance indicators because, in combination, they are indicative of good operation

and maintenance. When the system is operating properly, there will be little or no visible emissions. This is a good indicator because any increase in visible emissions indicates reduced control device performance.

*Rationale for Selection of Indicator Ranges:* The selected range for the baghouse is 1” to 6” H<sub>2</sub>O. These values are based on manufacturer’s recommended specifications for proper operation of the control devices. When an excursion occurs, corrective action will be initiated, beginning with an evaluation of the occurrence. All excursions will be documented.

*Quality Improvement Plan (QIP) Threshold:* The selected QIP threshold is three excursions within a 1 month period. If the QIP threshold is exceeded in a semi-annual period, a QIP will be developed and implemented.

**Emission Unit:** U5**Emission Point:** E12**Applicable Regulation:** 6.07**PM Emission Limit:** 0.40 lbs per MMBtu heat input**Control Device:** C11

**Monitoring Approach:** The key elements of the monitoring approach are presented in the table below.

Parameter	Indicator 1	Indicator 2	Inspection Maintenance
Indicator [(64.6(c)(1)(i))]	Pressure Drop ( $\Delta P$ ) across the wet scrubber	Visible Emissions	Daily pressure drop monitor across the wet scrubber. Daily visual inspections.
Measurement Approach [(64.6(c)(1)(ii))]	A pressure drop indicator shall be used to measure $\Delta P$ across the wet scrubber.	Method 9 Visible emission surveys will be conducted on a daily basis.	
Indicator Range [(64.6(c)(2))]	An excursion for the scrubber is defined as any operating condition where the $\Delta P$ is less than 2 inches H <sub>2</sub> O or greater than 6 inches H <sub>2</sub> O.	An excursion for visible emissions is defined as the presence of any visible emissions greater than 20% opacity on a six minute average.	
Bypass [(64.6(a)(2))]	If the $\Delta P$ falls below the 2 inches H <sub>2</sub> O, a possibility of a bypass is investigated.	If the opacity exceeds 20%, a possibility of a bypass is investigated	If visible emissions are observed greater than 20%, corrective action is taken within eight (8) hours of the initial observation.
QIP Threshold [64.8]	Daily $\Delta P$ readings outside the performance indicator range for more than 3 times within a 1 month period	Visible emissions greater than 20% opacity for more than 3 times within a 1 month period	
Performance Criteria/data representativeness [64.6 (c)(1)(iii)]	$\Delta P$ : Minimum acceptable accuracy of pressure drop indicator per manufacturer's specifications	Measurements are made at the exhaust stack	

Parameter	Indicator 1	Indicator 2	Inspection Maintenance
QA/QC Practices and Criteria [64.6 (b)(3)]	ΔP: Visual inspection per permit conditions and routine maintenance per preventative maintenance schedule	The observer will be certified in Method 9 procedures.	
Monitoring Frequency [64.6 (b)(4)]	ΔP monitored on a daily basis	Visible Emissions Survey conducted on a daily basis	Annual Inspection Records are maintained to document daily visual inspections and any maintenance performed.
Data Collection Procedures [64.6 (b)(4)(iii)]	Recorded on a daily basis	Recorded by observer on a daily basis	
Record Keeping and Reporting [64.9]	Excursion reporting and corrective actions taken	--	
	Semi-annual Reports include: <ul style="list-style-type: none"> <li>• Investigation and corrective action report.</li> <li>• Date, time, and duration of excursion.</li> <li>• Cause of and corrective actions taken to eliminate excursion, and</li> <li>• Measures taken to prevent re-occurrence</li> <li>• A description of the actions taken to implement a QIP (as applicable)</li> </ul>	Semi-annual Reports include: <ul style="list-style-type: none"> <li>• Investigation and corrective action report.</li> <li>• Date, time, and duration of excursion.</li> <li>• Cause of and corrective actions taken to eliminate excursion, and</li> <li>• Measures taken to prevent re-occurrence</li> <li>• A description of the actions taken to implement a QIP (as applicable)</li> </ul>	

**Justification**

*Background:* The pollutant specific emission source control devices at the facility consist of a Wet scrubber to control PM emissions from the combustion of wood waste.

*Rationale for Selection of Performance Indicators:* Pressure drop and visible emissions were selected as performance indicators because, in combination, they are indicative of good operation and maintenance. When the system is operating properly, there will be little or no visible



emissions. This is a good indicator because any increase in visible emissions indicates reduced control device performance.

*Rationale for Selection of Indicator Ranges:* The selected range for the wet scrubber is 2” to 6” H<sub>2</sub>O. These values are based on manufacturer’s recommended specifications for proper operation of the control devices. When an excursion occurs, corrective action will be initiated, beginning with an evaluation of the occurrence. All excursions will be documented.

*Quality Improvement Plan (QIP) Threshold:* The selected QIP threshold is three excursions within a 1 month period. If the QIP threshold is exceeded in a semi-annual period, a QIP will be developed and implemented.