Commonwealth of Kentucky
Division for Air Quality

STATEMENT OF BASIS / SUMMARY

Title V, Operating
Permit: V-25-014
Cumberland Cooperage, LLC dba Robinson Stave
1812 Hwy 3434
East Bernstadt, KY 40729

May 19, 2025
Ossama Ateyeh, Reviewer

SOURCE ID:	21-125-00073
AGENCY INTEREST:	2591
ACTIVITY:	APE20240004

Table of Contents

SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 2429, Special Product Sawmills, Not Elsewhere Classified (cooperage stock)

Single Source Det. ☐ Yes ☒ No If Yes, Affiliated Source AI:

Source-wide Limit ☒ Yes ☐ No If Yes, See Section 4, Table A

28 Source Category ☐ Yes ☒ No If Yes, Category:

County: Laurel
Nonattainment Area ☒ N/A ☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☐ Ozone ☐ Lead
If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☐ PM_{10} ☐ $PM_{2.5}$ ☒ CO ☐ NO_X ☐ SO_2 ☐ VOC

PTE* greater than 250 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☐ PM_{10} ☐ $PM_{2.5}$ ☒ CO ☐ NO_X ☐ SO_2 ☐ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) ☐ Yes ☒ No
If yes, list which pollutant(s):

PTE* greater than 25 tpy for combined HAP ☐ Yes ☒ No

*PTE does not include self-imposed emission limitations.

Description of Facility:
Cumberland Cooperage, LLC dba Robinson Stave (RS), which is owned by Sazerac Distillers, LLC and located at 1812 Hwy 3434 in East Bernstadt, Kentucky (Laurel County), operates a stave mill and cooperage that manufactures wood barrels for the bourbon industry. The facility operates wood and natural gas fired boilers, stave and head woodworking operation of saws, planers, jointers, sanders, steams, heat tunnels, and dryer. Insignificant activities include various stockpiles, log-yard activities, fuel storage tanks, natural gas fired space heaters, a coating process, and evaporator system for the wood fired boiler.

RS is currently regulated as a Title V source based on its annual potential-to-emit (PTE) for non-fugitive carbon monoxide (CO) emissions.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: V-25-014 Activities: APE20240004

Received: December 13, 2024 Application Complete Date(s): May 1, 2025

Permit Action: ☐ Initial ☒ Renewal ☐ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☐Yes ☒No NSR Applicable? ☐Yes ☒No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action ☒Yes ☐No

Description of Action:
APE20240004:

- The addition of the portable buck saw (EU 09-03), which is an Insignificant Activity.
- Renewal Permit for existing units.

APE20240003 Off Permit Changes

- Addition of EU11-02 Boiler blowdown water evaporator (50 gal) to handle the periodic water blowdown from the existing wood fire boiler EU 11-02 which is Insignificant Activity.

V-25-014 Emission Summary				
Pollutant	2023 Actual (tpy)	Previous PTE V-19-029 R2 (tpy)	Change (tpy)	Revised PTE V-25-014 (tpy)
CO	82.65	378.31	0	378.3
NO_X	5.38	21.96	0	21.95
PT	36.28	166.52	-0.41	166.11
PM_{10}	20.23	97.49	-.019	97.30
$PM_{2.5}$	11.67	59.00	-0.09	58.91
SO_2	0.29	1.08	-.002	1.078
VOC	0.32	1.32	0	1.322
Lead			.00002	.00002
Greenhouse Gases (GHGs)				
Carbon Dioxide	4,475	17,612	0	17,612
Methane	0.33	1.28	0	1.28
Nitrous Oxide	0.22	0.84	0	0.84
CO_2 Equivalent (CO_2e)		17,893	0	17,893
Hazardous Air Pollutants (HAPs)				
Hydrochloric Acid		1.04	0	1.04
Hexane; N-Hexane		0.104	0	0.104
Formaldehyde		0.253	0	0.253
Xylenes (Total)		0.001	0	0.001
Combined HAPs		2.26	0	2.26

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Unit: 11 – Wood-Fired Indirect Heat Exchanger				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	*0.51 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	3.16 lb/ton (AP-42, Table 1.6-1)	Multicyclone with a 95% efficiency
	20% Opacity	401 KAR 59:015, Section 4(2)		
SO_2	**4.22 lb/MMBtu	401 KAR 59:015, Section 5(1)(c)3.b.	0.304 lb/ton (AP-42, Table 1.6-2)	Assumed while combusting wood.

Initial Construction Date: 8/2015

Process Description:
EU 11; 8.7 MMBtu/hr, Wood-Fired Indirect Heat Exchanger; Superior Boiler Works, Inc. #4-X-1506

Applicable Regulations:
401 KAR 59:015, *New indirect heat exchangers*, applicable to indirect heat exchangers having a heat input capacity greater than 1 MMBtu/hr commenced on or after April 9, 1972.

401 KAR 63:002, Section 2(4)(jjjjj), 40 CFR 63.11193 through 63.11237, Tables 1 through 8 (**Subpart JJJJJJ**), *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, applicable to industrial, commercial, or institutional boilers as defined in 40 CFR 63.11237 located at, or is part of, an area source of HAPs, except as specified in 40 CFR 63.11195.

Emission and Operating Caps
The permittee shall not exceed 225 ton/yr of CO on a rolling twelve (12) month total used facility-wide [to preclude applicability of 401 KAR 51:017]

Comments:
The application that was received on August 16, 2017 (APE20170001) requested that this unit's rated capacity be adjusted from 12.35 MMBtu/hr to 8.7 MMBtu/hr.

Total Facility Heat Input Capacity = 14.67 MMBtu/hr = (5.97+8.7) MMBtu/hr
PM Emission Limit = 0.5117 lb/MMBtu = 0.9634(Total Facility Heat)$^{-0.2356}$ = 0.9634*$14.67^{-0.2356}$
**SO_2 Emission Limit = 4.2183 lb/MMBtu = 13.8781*$14.67^{-0.4434}$

The AP-42 emission factors is the average of (0.30 dry wood and 0.22 wet wood). PM is 0.26 lb/MMBtu or 3.159 lb/ton (0.26*6075*2000/$10^{6)}$ and SO_2 is 0.025 lb/MMBtu or 0.3037 lb/ton (0.025*6075*2000/$10^{6)}$ The following equation was used to convert the emission factor into lb/ton:

$$\frac{AP-42\ EF\ \frac{lb}{MMBtu} * 6075\ \frac{Btu}{lb} * 2000\ \frac{lb}{ton}}{10^6\ \frac{Btu}{MMBtu}}$$

Where 6075 Btu/lb is the wood heat content: (White Oak 29.1 MMBtu/cord with "DRY"=4200 lbs/cord & "GREEN"=5573 lbs/cord so "DRY" = 3.857 MMBtu/ton & "Green" = 10.443 MMBtu/ton for an average = 12.15 MMBtu/ton or 6075 Btu/lb)

This unit is not subject to a one-time energy assessment pursuant to 40 CFR 63, Subpart JJJJJJ, Table 2, Item 16, as it is not an existing biomass boiler nor is it greater than 10 MMBtu/hr. According to 40 CFR 63.11194(b), an affected source is an existing source if construction or reconstruction of the affected source commenced on or before June 4, 2010.

Emission Unit: 01-19, 08-01, 08-02, 08-24, 08-08, 08-12 and 08-25 Non-Fugitive Wood Operations							
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**			**Compliance Method**	
			ID	**EF (lb/SCC)**	**Basis**	**ID**	**Control**
PM	20 % Opacity	401 KAR 59:010, Section 3(1)(a)	01-19	2.80	See Notes	01-19	Cyclone 90% PM Cyclone 80% PM10 Cyclone 60% PM2.5
			08-01	0.35		08-01	Fabric Filter, 98%
			08-02	0.35		08-02	Fabric Filter, 98%
	E=2.34 if $P \leq 0.50$ $E = 3.59*P^{0.62}$ if $0.50 < P \leq 30$ $E = 17.31*P^{0.16}$ if $P>30$ (P is in ton/hr)	401 KAR 59:010, Section 3(2)	08-24	0.35		08-03	Fabric Filter, 98%
			08-08	0.35		08-08	Cyclone, 95%
			08-12	0.35		08-12	Cyclone, 95%
			08-25	2.80		08-25	Cyclone, 95%

Emission Unit	Process Description	Construction Date
01-19	Stave Mill 1 Woodworking Operations (63.68 tons raw logs/hr) or (7.96 MBft/hr)	2020
08-01	EBC2 Woodworking Operations 01 Stave Prep (12.58 tons rough staves/hr)	2017
08-02	EBC2 Woodworking Operations 02 Stave Finishing (11.78 tons rough staves/hr)	2017
08-24	EBC2 Woodworking Operations 03 Head Finishing (3.43 tons rough staves/hr to make finished heads)	2024
08-08	EBC2 Woodworking Operations 04 Crozier Cutting and Bung Drilling (10.47 tons rough barrels/hr to make finished barrels	2017
08-12	EBC2 Waste Wood Grinder (2.36 ton/hr)	2017
08-25	EBC2 Wood Waste Hog (10 tons wood/hr) or (1.25MBft/hr)	2024

Applicable Regulation:
401 KAR 59:010, *New process operations*, applicable to all process operations, which are not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.

Comments:
Emission factors are from a 2014 EPA memorandum titled "Particulate Matter Potential to Emit Emission Factors for Activities at Sawmills, Excluding Boilers, Located in Pacific Northwest Indian Country"

The Emission Unit 01-19 Stave Mill 1 Woodworking Operations units are given in ton/hr, 63.68 tons/hr. The Log Conversion Factor is 0.125 MBft/ton, so 63.68 ton/hr * 0.125 MBft/ton = 7.96 MBft/hr.

EU 08-24 replaced EU 08-03 in APE20240002.

Emission Units: 08-04 and 08-07: Natural Gas-Fired Charring Operations				
Pollutant	**Emission Limit (lb/hr)**	**Regulation**	**Emission Factor Used and Basis**	**Compliance Method**
PM	E=2.34 if $P \leq 0.50$ $E = 3.59*P^{0.62}$ if $0.50 < P \leq 30$ $E = 17.31*P^{0.16}$ if $P>30$ (P is in ton/hr)	401 KAR 59:010, Section 3(2)	5.82 lb/ton (AP-42, Table 1.6-1)	Fabric Filter and FGD (98% Efficiency)
	20% opacity	401 KAR 59:010, Section 3(1)(a)		Monitor Opacity

Initial Construction Date: 9/2017

Process Description:
08-04 Barrel Charring 02 and 08-07 Head Charring 02 are charred with flames using a process of incomplete combustion (3.9% charring fraction). The rated capacity (ton/hr) for total mass of the barrels for 08-04 is 6.31 ton/hr and 08-07 is 1.62 ton/hr which reflects a production rate of 182 barrels per hour.

Applicable Regulation:
401 KAR 59:010, *New process operations*, applicable to all process operations, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.

State-Origin Requirements:
401 KAR 63:020, *Potentially hazardous matter or toxic substances,* applicable to each affected facility which emits or may emit potentially hazardous matter or toxic substance, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division.

Emission and Operating Caps
The permittee shall not exceed 225 ton/yr of CO on a rolling twelve (12) month total used facility-wide [to preclude applicability of 401 KAR 51:017]

Comments:
A performance test of EU 08-04 was conducted on November 14-15, 2018, in order to develop an appropriate CO EF for charring operations (CMN20180001). The performance test revealed a CO emission rate of 0.35 lb/barrel (26.32 lb/hr)

Emission Units: 08-13 & 08-23: Natural Gas-fired Indirect Heat Exchangers				
Pollutant	**Emission Limit**	**Regulation**	**Emission Factor Used and Basis**	**Compliance Method**
PM	*0.49 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	7.6 lb/MMscf (AP-42 Table 1.4-2)	Compliance assumed while combusting NG.
	20% Opacity	401 KAR 59:015, Section 4(2)		
SO_2	**3.0 lbs/MMBtu	401 KAR 59:015, Section 5(1)(c)1.a.	0.6 lb/MMscf (AP-42 Table 1.4-2)	

Initial Construction Date: 2017

Process Description:
EU 08-13 EBC2 Boiler 01 and EU 08-23 EBC2 Boiler 02, both being 1.34 MMBtu/hr Natural Gas Indirect Heat Exchangers, (Peerless Boilers 211A-06-SP-E1E-CSD) used for process heat.

Applicable Regulation:
401 KAR 59:015, *New indirect heat exchangers*, applicable to units having a heat input capacity greater than 1 million BTU per hour (MMBtu/hr) and commenced on or after April 9, 1972.

Non-Applicable Regulation:
401 KAR 63:002, Section 2(4)(jjjjj), 40 CFR 63.11193 to 63.11237, Tables 1 to 8 (**Subpart JJJJJJ**), *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, not applicable to gas-fired boilers.

Emission and Operating Caps
The permittee shall not exceed 225 ton/yr of CO on a rolling twelve (12) month total used facility-wide [to preclude applicability of 401 KAR 51:017]

Comments:
Total Facility Heat Input Capacity = 17.35 MMBtu/hr = (5.97+8.7+1.34+1.34) MMBtu/hr
Total Facility Combusting Gaseous Fuel = 2.68 MMBtu/hr = (1.34 + 1.34) MMBtu/hr

PM Emission Limit = 0.4918 lb/MMBtu = 0.9634(Total Facility Heat)$^{-0.2356}$ = 0.9634**17.35*$^{-0.2356}$
**SO_2 Emission Limit = Use the lesser value of 3.0 lb/MMBtu or the formula result (5.1517 lb/MMBtu).
7.7223*(Total Facility Combusting Gaseous Fuel)$^{-0.4106}$= 7.7223**2.68*$^{-0.4106}$ = 5.1517 lb/MMBtu.

Emission Unit: 08-18: Natural Gas-fired Indirect Heat Exchanger				
Pollutant	**Emission Limit**	**Regulation**	**Emission Factor Used and Basis**	**Compliance Method**
PM	*0.48 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	7.6 lb/MMscf (AP-42 Table 1.4-2)	Compliance assumed while combusting NG.
	20% Opacity	401 KAR 59:015, Section 4(2)		
SO_2	**3.0 lbs/MMBtu	401 KAR 59:015, Section 5(1)(c)1.a.	0.6 lb/MMscf (AP-42 Table 1.4-2)	

Initial Construction Date: 2021

Process Description:
EU 08-18 EBC2 Boiler 03; 5.25 MMBtu/hr; Natural Gas-Fired Indirect Heat Exchanger; Hurst Boiler, Oil on Burners.

Applicable Regulation:
401 KAR 59:015, *New indirect heat exchangers*, applicable to units having a heat input capacity greater than 1 million BTU per hour (MMBtu/hr) and commenced on or after April 9, 1972.

Non-Applicable Regulation:
401 KAR 63:002, Section 2(4)(jjjjj), 40 CFR 63.11193 through 63.11237, Tables 1 through 8 (**Subpart JJJJJJ**), *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, not applicable to gas-fired boilers.

Emission and Operating Caps
The permittee shall not exceed 225 ton/yr of CO on a rolling twelve (12) month total used facility-wide [to preclude applicability of 401 KAR 51:017]

Comments:
Total Facility Heat Input Capacity = 19.942 MMBtu/hr = [8.7+(1.34*2)+(1.104*3)+5.25] MMBtu/hr
Total Facility Combusting Gaseous Fuel = 7.93 MMBtu/hr = (1.34 + 1.34 + 5.25) MMBtu/hr

PM Emission Limit = 0.47597 lb/MMBtu = 0.9634(Total Facility Heat)$^{-0.2356}$ = 0.9634*$19.942^{-0.2356}$
**SO_2 Emission Limit = Use the lesser value of 3.0 lb/MMBtu or the formula result (3.3 lb/MMBtu).
7.7223*(Total Facility Combusting Gaseous Fuel)$^{-0.4106}$= 7.7223*$7.93^{-0.4106}$ = 3.3 lb/MMBtu.

Emission Units: 01-13, 01-14, 01-17, 01-18, and 13 Fugitive Wood Operations		
Emission Unit	**Process Description**	**Construction Date**
01-13	Stave Mill 1 Debarker (69.2 tons/hr or 8.65 MBft/hr)	2020
01-14	Stave Mill 1 Bull Saw (63.68 tons/hr)	2020
01-17	Stave Mill 1 Chipper (16.56 tons/hr)	2020
01-18	Stave Mill 1 Chipper Stockpile (16.56 tons/hr)	2020
13	Dust Yard Grinder (7.06 tons/hr)	2010
	Dust Yard Stockpile (7.06 tons/hr)	1983

Applicable Regulation

401 KAR 63:010, *Fugitive emissions*, applicable to an apparatus, operation, or road which emits or may emit fugitive emissions provided that the fugitive emissions from such facility are not elsewhere subject to an opacity standard within the administrative regulations of the Division for Air Quality.

INSIGNIFICANT ACTIVITY

EP	Description	Generally Applicable Regulation
01-15	Stave Mill 1 Debarker Stockpile	401 KAR 63:010
01-16	Stave Mill 1 Dust Stockpile	401 KAR 63:010
03-09	8 Lumber Kilns (Boiler Building)	401 KAR 59:010
07	Gas Metal Arc Welding (Plant-wide	401 KAR 59:010
08	Yard Area/Haul Road (Plant-wide)	401 KAR 63:010
08-05	EBC2 Heat Tunnel with 16 direct fired NG burners rated at 0.25 MMBtu/hr each	401 KAR 63:020
08-16	EBC2 Steam Tunnel 01	N/A
08-17	EBC2 Steam Tunnel 02	N/A
08-26	EBC2 Sawdust Loadout 1	401 KAR 63:010
08-27	EBC2 Sawdust Loadout 2	401 KAR 63:010
09-02	Outdoor Wood Particle Handling	401 KAR 63:010
14-01	2,000-Gallon Off-Road Diesel Fuel Storage Tank	N/A
14-02	10,000-Gallon On-Road Diesel Fuel Storage Tank	N/A
14-03	550-Gallon Diesel Exhaust Fluid Storage Tank	N/A
14-04	10,000-Gallon On-Road Diesel Fuel Storage Tank	N/A
08-19	Vycar 660X14 PVC/PVDC EMULSION Coating Application	401 KAR 63:010 and 401 KAR 63:020
EP18	Eight Natural Gas-Fired Indirect Space Heaters rated (0.2 MMBtu/he. Each)	401 KAR 59:010 and 401 KAR 63:020
11-02	Boiler Blowdown Water Evaporator (50 Gal)	401 KAR 59:010; 401 KAR 63:020
09-03	Portable Buck Saw	401 KAR 63:010

Section 3 – Emissions, Limitations and Basis (Continued)

Testing Requirements\Results

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
EU 08-04 (08-04)		CO	401 KAR 50:045 & 401 KAR 59:005, Section 2	Initial	U.S. EPA Reference Method 10		0.35 lb/barrel	Emission Factor	CMN20180001	11/14-15/2018

Footnotes:

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
Voluntary emission limit for the entire facility of less than 225 tpy for CO emissions from all non-fugitive sources	To Preclude 401 KAR 51:017	All non-fugitive emission of CO

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 59:010, *New process operations*	01-19, 08-01, 08-02, 08-24, 08-08, 08-12, 08-04, 08-07 and 08-25
401 KAR 59:015, *New indirect heat exchangers*	11,08-13, 08-23 and 08-18
401 KAR 63:010, *Fugitive emissions*	13, 01-13, 01-14, 01-17 and 01-18
401 KAR 63:020, *Potentially hazardous matter or toxic substances.*	08-04 and 08-07
401 KAR 63:002, Section 2(4)(jjjjj), 40 CFR 63.11193 through 63.11237, Tables 1 through 8 (**Subpart JJJJJJ**), *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*	11

Table C - Summary of Precluded Regulations:

Precluded Regulations	Emission Unit
401 KAR 51:017, *Prevention of significant deterioration of air quality*	SOURCE-WIDE

Table D - Summary of Non Applicable Regulations:

Non Applicable Regulations	Emission Unit
401 KAR 63:002, Section 2(4)(jjjjj), 40 CFR 63.11193 through 63.11237, Tables 1 through 8 (**Subpart JJJJJJ**), *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*	08-13, 08-23, AND 08-18

Air Toxic Analysis

N/A

Single Source Determination

N/A

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD / Syn Minor
S-00-054	Renewal		4/25/2000	5/4/2000	Permit Renewal	N/A
S-12-063	Renewal	APE20120001	9/13/2012	11/7/2012	Addition of three sawmills, planning and trimming operations, debarking operations, sawdust stockpile, and welding	N/A
S-12-063 R1	Revision	APE20140001	1/20/2015	2/6/2015	Emission Unit 04 replaced with like for like equipment	N/A
S-12-063 R2	Revision	APE20170001	10/23/2017	4/25/2018	Addition of new equipment associated with expansion of facility	N/A
V-19-029	Initial	APE20190004	11/18/2019	6/24/2020	Initial Title V	N/A
V-19-029 R1	Minor Revision	APE20200003	1/29/2021	10/17/2021	Modifying Descriptions and Removing/Adding Equipment	Syn Minor
	Significant Revision	APE20210001	5/5/2021		Modifying Descriptions, Removing/Adding Equipment and adding a Voluntary Limit for CO emissions	
	Admin - Amend	APE20210002	7/14/2021		Change Name and Ownership	
V-19-029 R2	Miner Revision	APE20240002	7/30/2024	10/4/2024	Modifying Existing Units and Removing/Adding Equipment	N/A

SECTION 6 – PERMIT APPLICATION HISTORY

None

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS – Ambient Air Quality Standards
BACT – Best Available Control Technology
Btu – British thermal unit
CAM – Compliance Assurance Monitoring
CO – Carbon Monoxide
Division – Kentucky Division for Air Quality
ESP – Electrostatic Precipitator
GHG – Greenhouse Gas
HAP – Hazardous Air Pollutant
HF – Hydrogen Fluoride (Gaseous)
MSDS – Material Safety Data Sheets
mmHg – Millimeter of mercury column height
NAAQS – National Ambient Air Quality Standards
NESHAP – National Emissions Standards for Hazardous Air Pollutants
NO_x – Nitrogen Oxides
NSR – New Source Review
PM – Particulate Matter
PM_{10} – Particulate Matter equal to or smaller than 10 micrometers
$PM_{2.5}$ – Particulate Matter equal to or smaller than 2.5 micrometers
PSD – Prevention of Significant Deterioration
PTE – Potential to Emit
SO_2 – Sulfur Dioxide
TF – Total Fluoride (Particulate & Gaseous)
VOC – Volatile Organic Compounds

APPENDIX B – INDIRECT HEAT EXCHANGER HISTORY

EU	Fuel(s)	Capacity (MMBtu/hr)	Construction Date	Date Removed	Total Heat Input Capacity for PM (MMBtu/hr)	PM Limit (lb / MMBtu)	Total Heat Input Capacity for SO_2 (MMBtu/hr)	SO_2 Limit (lb / MMBtu)
01 (03-01)	Wood	5.97	1991	2018	5.97	0.56	5.97	5.0
11	Wood	8.7	2015	N/A	14.67	0.51	14.67	4.22
08-13	Natural Gas	1.34	2017	N/A	17.35	0.49	2.68	3.0
08-23	Natural Gas	1.34	2017	N/A	17.35	0.49	2.68	3.0
04-10	Wood	1.104	2020	2023	14.692	0.51	12.012	4.6
01-11	Wood	1.104	2020	2023	14.692	0.51	12.012	4.6
01-12	Wood	1.104	2020	2023	14.692	0.51	12.012	4.6
08-18	Natural Gas	5.25	2021	N/A	19.942	0.48	7.93	3.0