ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
831X	Boiler #B	None – vents via 831E

Provide a description of the emission unit (type, method of operation, design parameters, etc.):
In 2004, Cytec replaced their three existing boilers with two new natural gas, distillate oil co-firing boilers. The boilers generate steam, which is used on the plant site for process heat and for comfort heat.

Manufacturer:	**Model number:**	**Serial number:**
English Boiler & Tube, Inc.	80-SLG-250	24-011-2
Construction date:	**Installation date:**	**Modification date(s):**
2004	2004	NA

Design Capacity (examples: furnaces - tons/hr, tanks - gallons):
97.9 MMBTU/hr (Natural Gas) ; 93.6 MMBTU/hr (Distillate Oil)

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
97,900 cuft/hr (Natural Gas) ; 658 gal/hr (Distillate Oil)	858 MM cuft /yr (Natural Gas) ; 5.764 MM gal/yr (Distillate Oil)	8,760 hr/yr

***Fuel Usage Data* (fill out all applicable fields)**

Does this emission unit combust fuel? _X_ Yes ____ No	**If yes, is it?** _X_ Indirect Fired ___Direct Fired
Maximum design heat input and/or maximum horsepower rating: 97.9 MMBTU/hr (Natural Gas) ; 93.6 MMBTU/hr (Distillate Oil)	**Type and Btu/hr rating of burners:** Todd Combustion, John Zink Co. LLC 97.9 MMBTU/hr (Natural Gas) ; 93.6 MMBTU/hr (Distillate Oil)

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Primary Fuel:	Natural Gas	97,900 cuft/hr	858 MM cuft /yr
Secondary Fuel:	Distillate Oil	658 gal/hr	5.764 MM gal/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	0.2 gr /100 ft3	NA	1,000 BTU/cuft
Distillate Oil	0.05 wt%	NA	142,200 BTU/gal

Emissions Data	**[When combusting Natural Gas]**	
Criteria Pollutants	Potential Emissions (After Control)	
	PPH	TPY
Carbon Monoxide (CO)	8.06	35.40
Nitrogen Oxides (NO_X)	4.70	20.58
Lead (Pb)	0.001	0.0003
Particulate Matter ($PM_{2.5}$)	0.91	4.00
Particulate Matter (PM_{10})	0.91	4.00
Total Particulate Matter (TSP)	0.91	4.00
Sulfur Dioxide (SO_2)	0.06	0.30
Volatile Organic Compounds (VOC)	0.66	2.90
Hazardous Air Pollutants	Potential Emissions (After Control)	
	PPH	TPY
Benzene	0.0003	0.0011
Hexane	0.22	0.95
Regulated Pollutants other than Criteria and HAP	Potential Emissions (After Control)	
	PPH	TPY
None	---	---

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Primary means of estimating emissions is utilizing emission factors from AP-42 Chapter 1.4 Natural Gas Combustion or Chapter 1.3 Fuel Oil Combustion, combined with actual combustion quantities of natural gas or fuel oil.

Previous stack tests have been conducted for carbon monoxide, due to the former Boiler MACT requirements, on the following dates: 9/27/05, 9/12/06, 9/25/07, 9/23/08.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission limits – R30-07300003-2009-SM01(Part 3 of 4): 6.1.1; R13-2560E: 4.1.1, 4.1.9, and 4.1.13.; 45CSR§2-4.1.b; 45CSR§10-3.1.e.
2. Emission limits – R30-07300003-2009-SM01(Part 3 of 4): 6.1.6; R13-2560E: 4.1.7 and 4.1.17(c); 45CSR§2-3.1; 45CSR16; 40 C.F.R. §60.43c(c).
3. Operational limits – R30-07300003-2009-SM01(Part 3 of 4): 6.1.2, 6.1.3, 6.1.4, 6.1.7; R13-2560E: 4.1.2, 4.1.3, 4.1.4, 4.1.12 and 4.1.17 (b); 45CSR§2-9.2; 45CSR16; 40 C.F.R. §§60.42c(d) and 60.42c(i).
4. Operational limits/Boiler MACT – R30-07300003-2009-SM01(Part 3 of 4): 6.1.8, 6.1.9, 6.1.10, 6.1.11; 45CSR34; 40 C.F.R. §63.7495(b); §63.7500(a)(1), Table 3, Item #1; 40 C.F.R. §63.7505(a); 40 C.F.R. §§ 63.7540(a)(12) and (13); 40 C.F.R. §§ 63.7540(a)(10)(i) through (vi); §63.7500(a)(1), Table 3, Item #4; 40 C.F.R. §63.7505(a); §63.7500(a)(3).

____ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. R30-07300003-2009-SM01(Part 3 of 4): 6.1.5, 6.3.1, 6.3.2, 6.3.3, 6.4.1; R13-2560E: 4.1.5, 4.1.10, 4.1.11, 4.1.17 (d) and(e), 4.3.1, 4.4.4, and 4.4.7; 40 C.F.R. §§60.48c(g) and 60.7(b); 45CSR§§2-8.3.c and 8.3.d
2. R30-07300003-2009-SM01(Part 3 of 4): 6.2.1, 6.3.1, 6.3.2, 6.3.3, 6.4.3; R13-2560E: 4.1.8, 4.1.10, 4.2.1 and 4.3.1, ; 45CSR§2-3.2; 45CSR16; 40 C.F.R. §60.45c(a); 45CSR§30-5.1.c.
3. R30-07300003-2009-SM01(Part 3 of 4): 6.1.5, 6.4.1, 6.4.2, 6.5.1; R13-2560E: 4.1.5, 4.1.11, 4.1.17(a), (b), (d) and (e), 4.4.4, 4.4.5, 4.4.6, and 4.4.7; 45CSR16; 40 C.F.R. §§60.48c(d), (e)(1) and (11), f(1), and (j).
4. R30-07300003-2009-SM01(Part 3 of 4): 6.4.4 – 6.4.8, 6.5.2 – 6.5.8; 45CSR34; 40 C.F.R. §63.7555(a); §63.7555(h); §63.7555(i); §63.7555(j); §§63.7560(a), (b), and (c); §63.7530(d); §63.7530(e); §§ 63.7530(f), 63.7545(a), 63.7545(e)(1), (6), (7), (8)(i) and (ii), and 63.9(h); §63.7540(b); §63.7545(f); §63.7545(h); §§63.7550(a), (b), and (c)(1); 40 C.F.R. §63.7550(h)(3).

Are you in compliance with all applicable requirements for this emission unit? _X_ Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.