

US EPA ARCHIVE DOCUMENT

	B	C
1	Source Description	
2		
3	Phase II ID No.	1011
4	EPA ID No.	TND003376928
5	Facility Name	Eastman Chemicals Co. - Tennessee Eastman Div
6	Facility Location	
7	City	Kingsport
8	State	TN
9	Unit ID Name/No.	Boiler No. 20
10	Other Sister Facilities	Boiler Nos. 18 and 19
11	Number of Sister Facilities	2
12	Combustor Class	Coal-fired boiler
13	Combustor Type	Stoker
14	Combustor Characteristics	Babcock & Wilcox, coal-fired watertube spreader-stoker, 196 MM Btu/hr, comb chamber dimensions (ft): 18 w, 17 l, 40 h, 600 psig steam
15	Capacity (MMBtu/hr)	196
16	Soot Blowing	Yes
17	APCS Detailed Acronym	ESP
18	APCS General Class	ESP
19	APCS Characteristics	Research Cottrell, 2 fields; 11,232 ft2 plate area for 135 kacfm @ 450 F, SCA=83 ft2/kacfm
20	Hazardous Wastes	Sludge
21	Haz Waste Description	Biosludge
22	Supplemental Fuel	Coal
23	Stack Characteristics	14 Blrs (# 11 - 24) exhaust to one common breeching interconnected to 3 stacks
24		
25	Diameter (ft)	
26	Height (ft)	225
27	Gas Velocity (ft/sec)	
28	Gas Temperature (°F)	
29		
30	Permitting Status	BIF Interim Status Tier III for metals and chlorine
	HWC Burn Status (Date if	
31	Terminated)	

	B	C
1	Cond Description	
2		
3	1011C1	
4		
5	Report Name/Date	Recertification of Compliance for Tennessee Eastman Division Boilers 18, 19, and 20; dated March 24, 1998
6	Report Prepar	Eastman Chemical Co
7	Testing Firm	Eastman Chemical Co
8	Testing Dates	February 4, 1998
9	Cond Dates	Feb-98
10	Cond Description	CoC; max feedrates
11	Content	PM, metals, CO, HCl/Cl ₂ ; feed analysis for metals, ash, HCl/Cl ₂
12		
13	1011C2	
14		
15	Report Name/Date	Recertification of Compliance for Tennessee Eastman Division Boilers 18, 19, and 20; dated March 24, 1998
16	Report Prepar	Eastman Chemical Co
17	Testing Firm	Eastman Chemical Co
18	Testing Dates	February 6, 1998
19	Cond Dates	Feb-98
20	Cond Description	CoC; min combustion temperature
21	Content	CO

	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Stack Gas Emissions													
2														
3		Comments	Units	7% O2										
4														
5										sootblow				
6	1011C1					R1	R2			R3		Cond Avg		
7														
8	Sampling Train	(PM, HCl/Cl2)	E1											
9	Stack Gas Flowrate		dscfm			64847	64729			62786		64121		
10	O2		%			12.1	11.3			12.1		11.8		
11	Moisture		%			10.61	10.04			9.85		10.2		
12	Temperature		°F			349	351			352		350.7		
13														
14	HCl		ppmv	n		112	110			95.9		106.0		
15	Cl2		ppmv	n		1.62	1.94			1.8		1.79		
16														
17	PM	E1	gr/dscf	y		0.0375	0.0149			0.0291		0.0263		0.0272
18	CO (RA)	E1	ppmv	y		45.3	51.1			46.1		47.5		
19	CO (MHRA)	E1	ppmv	y		46.1	51.4			46.8		48.1		
20	HCl	E1	ppmv	y		176.2	158.8			150.9		161.9		
21	Cl2	E1	ppmv	y		2.5	2.8			2.8		2.7		
22	Total Chlorine	E1	ppmv	y		181.3	164.4			156.5		167.4		
23														
24	Sampling Train	(Metals)	E2											
25	Stack Gas Flowrate		dscfm			65,749	67,231			68,573		67184		
26	O2		%			12.1	11.3			12.1		11.8		
27	Moisture		%			9.53	9.85			10.18		9.85		
28	Temperature		°F			354	353			355		354		
29	Sample Volume		dscf			39.76	40.48			41.17				
30														
31	Mercury		µg/dscm	n		2.1	1.96			1.8				
32	Lead		µg/dscm	n		91.13	107.89			105.68				
33	Cadmium		µg/dscm	n		5.1	5.67			4.97				
34	Arsenic		µg/dscm	n	nd	27.1	24.22			26.26				
35	Beryllium		µg/dscm	n		2.57	3.09			3.67				
36	Chromium		µg/dscm	n		42.5	62.2			80.4				
37	Antimony		µg/dscm	n		43.79	65.69			60.15				
38														
39	Mercury	E2	µg/dscm	y		3.3	2.83			2.9		3.0		
40	Lead	E2	µg/dscm	y		143.35	155.72			166.23		155.1		
41	Cadmium	E2	µg/dscm	y		8.0	8.18			7.81		8.0		
42	Arsenic	E2	µg/dscm	y	nd	42.6	34.95			41.30	36	39.6		
43	Beryllium	E2	µg/dscm	y		4.04	4.46			5.78		4.8		
44	Chromium	E2	µg/dscm	y		66.9	89.8			126.5		94.4		
45	Antimony	E2	µg/dscm	y		68.88	94.81			94.62		86.1		
46														
47	SVM	E2	µg/dscm	y		151.39	163.90			174.05		163.1		
48	LVM	E2	µg/dscm	y	38	113.53	129.19			173.55	10	138.8		
49														
50	1011C2					R1	R2			R3		Cond Avg		
51														
52	CO (MHRA)	E1	ppmv	y		87.3	86.9			88.2		87.5		
53	CO (RA)	E1	ppmv	y		86.9	86.1			85.8		86.2		

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	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1	Feedstreams																									
2																										
3																										
4																										
5	1011C1																									
6																										
7	Feedstream Number																									
8	Feed Class																									
9	Feed Class 2																									
10	Feedstream Description																									
11	Feed Rate	lb/hr																								
12	Heating Value	Btu/lb																								
13	Ash	lb/hr																								
14	Chlorine	lb/hr																								
15	Antimony	lb/hr																								
16	Arsenic	lb/hr																								
17	Barium	lb/hr																								
18	Beryllium	lb/hr																								
19	Cadmium	lb/hr																								
20	Chromium	lb/hr																								
21	Lead	lb/hr																								
22	Mercury	lb/hr																								
23	Silver	lb/hr																								
24	Thallium	lb/hr																								
25																										
26	Stack Gas Flowrate	dscfm																								
27	O2	%																								
28																										
29	Thermal Feedrate	MMBtu/hr																								
30	Estimated Firing Rate	MMBtu/hr																								
31																										
32	Feedrate MTEC Calculations																									
33	Ash	mg/dscm																								
34	Chlorine	µg/dscm																								
35	Antimony	µg/dscm																								
36	Arsenic	µg/dscm																								
37	Barium	µg/dscm																								
38	Beryllium	µg/dscm																								
39	Cadmium	µg/dscm																								
40	Chromium	µg/dscm																								
41	Lead	µg/dscm																								
42	Mercury	µg/dscm																								
43	Silver	µg/dscm																								
44	Thallium	µg/dscm																								
45																										
46	SVM	µg/dscm																								
47	LVM	µg/dscm																								
48																										
49	1011C2																									

	AB	AC	AD	AE	AF	AG	AH	AI	AJ
1									
2									
3									
4									
5	Cond Avg		R1		R2		R3		Cond Avg
6									
7	F3		F4		F4		F4		F4
8	Sludge		Total		Total		Total		Total
9	HW		Total		Total		Total		Total
10	Biosludge		Total		Total		Total		Total
11	9084								
12	1092								
13	113.9								
14	1.82								
15	0.0364								
16	0.0178								
17	0.2								
18	0.001								
19	0.0024								
20	0.516								
21	0.115								
22	0.000091								
23	0.0243								
24	0.0121								
25									
26	67184								
27	11.8								
28									
29	9.9		182.4		182.7		184.7		182.4
30									195.5
31									
32									
33	680.2		7599.5		6754.1		7085.3		7146.3
34	11121.2		212823.6		185226.8		198600.3		198883.6
35	221.6	2.3	2484.3	2.1	2201.9	2.2	2304.3	2.2	2330.1
36	108.5		1422.7		1303.0		1372.0		1365.9
37	934.4		23201.4		20548.9		22350.2		22033.5
38	5.9		487.5		423.6		489.4		466.8
39	14.6	0.8	313.7	0.8	277.5	0.8	289.8	0.8	293.7
40	3142.2		16497.5		14493.3		15278.4		15423.0
41	704.7		3731.9		3268.9		3424.3		3475.0
42	1.1	1.5	95.4	1.5	83.9	6.9	92.2	2.1	89.4
43	73.9	26.7	1081.7	27.0	959.7	27.9	1012.6	21.5	944.1
44	36.9	14.7	1267.2	15.3	1125.6	15.3	1173.3	12.4	1151.8
45									
46	719	4	4046	4	3546	4	3714	4	3769
47	3257		18408		16220		17140		17256
48									
49									

	A	B	C
1	Process Information		
2			
3		Units	Cond Avg
4			
5	1011C1		
6			
7	Steam Flow	klb/hr	143.6
8	Comb Chamber Outlet Temperature	F	1164
9	ESP Inlet Temperature	F	426
10	ESP Power	kW	14.3
11	ESP Air Flow (velocity)	ft/min	2566
12			
13	1011C2		
14			
15	Steam Flow	klb/hr	100
16	ESP Air Flow (velocity)	ft/min	2318
17	Comb Chamber Temperature	F	974