	B	C
1	**Source Description**	
2		
3	Phase II ID No.	845
4	EPA ID No.	TXD008092793
5	Facility Name	Dow Chemical Company
6	Facility Location	
7	City	Freeport
8	State	TX
9	Unit ID Name/No.	F-210
10	Other Sister Facilities	None
11	Number of Sister Facilities	0
12	Combustor Class	HCl Production Furnace
13	Combustor Type	
14	Combustor Characteristics	Firetube boiler made by Johnston company, horizontal direct fired combustion chamber made by John Zink Company, capacity of 50.2 MMBtu/hr
15	Capacity (MMBtu/hr)	50.2
16	Soot Blowing	None
17	APCS Detailed Acronym	WHB/Q/HCLABS/VS/WS
18	APCS General Class	WHB, WQ, LEWS, HEWS
19	APCS Characteristics	(Quench and HCl absorber, venturi scrubber, wet scrubber) Gases contacted with caustic water in an ejector venturi (VE-214) then pass through scrubbing medium in T-214 chlorine scrubber
20	Hazardous Wastes	Liq
21	Haz Waste Description	Liquid wastes (Epi Heavies, Allyl Tars mix, TCP, BO Heavies)
22	Supplemental Fuel	Natural gas
23		
24	Stack Characteristics	
25	Diameter (ft)	2.5
26	Height (ft)	85
27	Gas Velocity (ft/sec)	47.5
28	Gas Temperature (°F)	140.7
29		
30	Permitting Status	Tier I for metals except Tier lll for Cr+6 and Tier III for Cl and Tier III Pb?
31	HWC Burn Status (Date if Terminated)	

	B	C
1	**Cond Description**	
2		
3	**845C1**	
4		
5	Report Name/Date	F-210 Trial Burn and Risk Burn Report, July 13 and 15, 1998
6	Report Prepare	Focus Environmental, Inc.
7	Testing Firm	METCO Environmental
8	Testing Dates	April 16, 1998
9	Cond Dates	April-98
10	Condition Descr	Trial burn, max waste feed rate, max ash and Cr
11	Content	PM, HCl/Cl2, Cr+6, Cr/Pb
12		
13	**845C2**	
14		
15	Report Name/Date	F-210 Trial Burn and Risk Burn Report, July 13 and 15, 1998
16	Report Prepare	Focus Environmental, Inc.
17	Testing Firm	METCO Environmental
18	Testing Dates	April 17, 1998
19	Cond Dates	Apr-98
20	Condition Descr	Trial burn, DRE min comb temp, max stack gas flow rate
21	Content	DRE (chlorobenzene)
22		
23	**845C3**	
24		
25	Report Name/Date	F-210 Trial Burn and Risk Burn Report, July 13 and 15, 1998
26	Report Prepare	Focus Environmental, Inc.
27	Testing Firm	METCO Environmental
28	Testing Dates	April 14, 1998
29	Cond Dates	Apr-98
30	Condition Descr	Risk burn, above normal feed of liq waste, normal comb temp
31	Content	PCDD/F, metals

	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														
6	**845C1**	**Trial Burn**				R1		R2		R3		Cond Avg		
7														
8	PM	E1	gr/dscf	y		0.0012		0.0018		0.0015		0.0015		
9	CO (MHRA)	E1	ppmv	y		4.85		4.12		4.3		4.4		
10	CO (RA)	E1	ppmv	y		4.23		3.55		3.4		3.7		
11	Chromium (Hex)		g/hr			0.15		0.08		0.08		0.1		
12	Chromium		g/hr			0.072		0.065		0.13		0.09		
13	Lead		g/hr			2.9		3.3		3.2		3		
14	HCl		g/hr			23		24		17		21.3		
15	Cl2		g/hr			51		62		55		56		
16														
17	Chromium (Hex)	E2	µg/dscm	y		7.9		4.0		4.2		5.3		
18	Chromium	E3	µg/dscm	y		3.6		3.1		6.4		4.4		
19	LVM	E3	µg/dscm	y		3.6		3.1		6.4		4.4		No Be, As
20	Lead	E3	µg/dscm	y		144.6		157.2		158.1		151.7		
21	SVM	E3	µg/dscm	y		144.6		157.2		158.1		151.7		No Cd
22	HCl	E1	ppmv	y		0.8		0.8		0.6		0.7		
23	Cl2	E1	ppmv	y		0.9		1.1		1.0		1.0		
24	Total Chlorine	E1	ppmv	y		2.61		2.91		2.49		2.68		
25														
26	Sampling Train	PM, HCl/Cl2	E1											
27	Stack Gas Flowrate		dscfm			13700		14300		14000		14000		
28	O2		%			9.4		9.4		9.4		9.4		
29	Moisture		%											
30	Temperature		°F											
31														
32	Sampling Train	Cr+6	E2											
33	Stack Gas Flowrate		dscfm			13468		14386		13645		13833		
34	O2		%											
35	Moisture		%											
36	Temperature		°F											
37														
38	Sampling Train	Cr/Pb	E3											
39	Stack Gas Flowrate		dscfm			14255		14923		14386		14521		
40	O2		%											
41	Moisture		%											
42	Temperature		°F											
43														
44	**845C2**	**Trial Burn**				R1		R2		R3		Cond Avg		
45														
46	CO (MHRA)	E1	ppmv	y		64.72		62.15		54.01		60.3		
47	CO (RA)	E1	ppmv	y		59.45		55.62		52.85		56.0		
48														
49	POHC DRE	Chlorobenzene												
50	POHC Feedrate		lb/hr			45		45		45				
51	Emission Rate	E1	lb/hr		nd	3.90E-05	nd	3.90E-05	nd	4.00E-05				
52	DRE	E1	%		>	99.99991	>	99.99991	>	99.99991				
53														
54	Sampling Train	DRE	E1											
55	Stack Gas Flowrate		dscfm			16334		16439		16311		16361.3		
56	O2		%			6		5.9		5.9		5.9		
57	Moisture		%			19.77		19.11		20.34		19.7		
58	Temperature		°F			141		140		141		140.7		
59														
60	**845C3**	**Risk Burn**				R1		R2		R3		Cond Avg		
61														
62	CO (MHRA)	E1	ppmv	y		10.34		11.53		5.22		9.03		
63	CO (RA)	E1	ppmv	y		8.64		6.45		4.66		6.58		
64	Antimony		µg/dscf	n	nd	0.0047	nd	0.0047	nd	0.0047				
65	Arsenic		µg/dscf	n	nd	0.0044	nd	0.019	nd	0.0044				
66	Barium		µg/dscf	n		0		0		0				
67	Beryllium		µg/dscf	n	nd	0.00057	nd	0.00058	nd	0.00058				
68	Cadmium		µg/dscf	n		0.0304	nd	0.0059	nd	0.0048				
69	Chromium		µg/dscf	n		0.0131		0.011		0.0104				
70	Cobalt		µg/dscf	n	nd	0.016	nd	0.019	nd	0.017				
71	Copper		µg/dscf	n		0.42		0.676		0.445				

	B	C	D	E	F	G	H	I	J	K	L	M	N	O
72	Lead		µg/dscf	n		0.0484		0.0278		0.0279				
73	Manganese		µg/dscf	n		0.73		0.0382		0.67				
74	Mercury		µg/dscf	n	nd	0.0055	nd	0.0037	nd	0.0025				
75	Molybdenum		µg/dscf	n	nd	0.11	nd	0.12	nd	0.1				
76	Nickel		µg/dscf	n	nd	0.076	nd	0.14	nd	0.08				
77	Selenium		µg/dscf	n	nd	0.0082	nd	0.0083	nd	0.0083				
78	Silver		µg/dscf	n	nd	0.0011	nd	0.0011	nd	0.0011				
79	Thallium		µg/dscf	n	nd	0.012	nd	0.013	nd	0.0072				
80	Vanadium		µg/dscf	n	nd	0.01	nd	0.0067	nd	0.0067				
81														
82	Antimony	E1	µg/dscm	y	nd	0.3	nd	0.3	nd	0.2	100	0.3		
83	Arsenic	E1	µg/dscm	y	nd	0.2	nd	1.0	nd	0.2	100	0.5		
84	Barium	E1	µg/dscm	y		0.0		0.0		0.0		0.0		
85	Beryllium	E1	µg/dscm	y	nd	0.03	nd	0.03	nd	0.03	100	0.0		
86	Cadmium	E1	µg/dscm	y		1.7	nd	0.3	nd	0.3	26	0.7		
87	Chromium	E1	µg/dscm	y		0.7		0.6		0.5		0.6		
88	Cobalt	E1	µg/dscm	y	nd	0.9	nd	1.0	nd	0.9	100	0.9		
89	Copper	E1	µg/dscm	y		22.7		36.3		23.4		27.5		
90	Lead	E1	µg/dscm	y		2.6		1.5		1.5		1.9		
91	Manganese	E1	µg/dscm	y		39.7		2.1		35.3		25.7		
92	Mercury	E1	µg/dscm	y	nd	0.3	nd	0.2	nd	0.1	100	0.2		
93	Molybdenum	E1	µg/dscm	y	nd	6.0	nd	6.5	nd	5.3	100	5.9		
94	Nickel	E1	µg/dscm	y	nd	4.1	nd	7.5	nd	4.2	100	5.3		
95	Selenium	E1	µg/dscm	y	nd	0.4	nd	0.4	nd	0.4	100	0.4		
96	Silver	E1	µg/dscm	y	nd	0.1	nd	0.1	nd	0.1	100	0.1		
97	Thallium	E1	µg/dscm	y	nd	0.7	nd	0.7	nd	0.4	100	0.6		
98	Vanadium	E1	µg/dscm	y	nd	0.4	nd	0.4	nd	0.4	100	0.4		
99	SVM	E1	µg/dscm	y		4.3	19	1.7	16	1.6	8	2.5		
100	LVM	E1	µg/dscm	y	32	0.8	94	1.1	39	0.7	60	0.9		
101														
102	Sampling Train	Metals	E1											
103	Stack Gas Flowrate		dscfm			14269		13953		14188		14136.7		
104	O2		%											
105	Moisture		%											
106	Temperature		°F											
107														
108	Sampling Train	PCDD/PCDF	E2											
109	Stack Gas Flowrate		dscfm			14580		13550		14100		14076.7		
110	O2		%			11.9		11.8		11.6		11.8		
111	Moisture		%											
112	Temperature		°F											

	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
1	**Feedrate Calculations**																								
2																									
3																									
4	**845C1**	**Trial burn**			R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg		R1		R2		R3
5																									
6	Feedstream Number				F1		F1		F1		F1		F2		F2		F2		F2						
7	Feed Class				Liq HW		Liq HW		Liq HW		Liq HW		Liq HW		Liq HW		Liq HW		Liq HW						
8	Feed Class 2																				HW		HW		HW
9	Feedstream Description				TCP		TCP		TCP		TCP		BO Heavies		BO Heavies		BO Heavies		BO Heavies						
10	Feed Rate		lb/hr		5600		5599		5604		5,599.0		1090		1093		1088		1089						
11	Viscosity		cps		1.9		2		2		2.00		1.2		1.3		1.2		1.27						
12	Heating Value		Btu/lb		5170		5320		5110		5200.0		9310		9310		9310		9390						
13	Density		lb/gal		12		12		12		12.0		9.2		9.2		9.2		9.2						
14	Ash		lb/hr		0.022		0.34		0.28		0.2		0.31		0.34		0.013		0.2						
15	Chlorine		lb/hr		3960		3980		3820		3920		483		457		482		474						
16	Antimony		g/hr	nd	0.06	nd	0.06	nd	0.06	nd	0.06	nd	0.01	nd	0.01	nd	0.01		0.01						
17	Arsenic		g/hr	nd	0.06	nd	0.06	nd	0.06	nd	0.06	nd	0.01	nd	0.01	nd	0.01		0.01						
18	Barium		g/hr	nd	0.009	nd	0.009	nd	0.009	nd	0.009		0.0027		0.0044	nd	0.002		0.003						
19	Beryllium		g/hr	nd	0.007	nd	0.007	nd	0.007	nd	0.007	nd	0.001	nd	0.001	nd	0.001		0.001						
20	Cadmium		g/hr	nd	0.04	nd	0.04	nd	0.051	nd	0.043	nd	0.008	nd	0.008	nd	0.008		0.008						
21	Chromium		g/hr	nd	0.02	nd	0.02	nd	0.02	nd	0.02		0.0061		0.0076		0.0052		0.006						
22	Lead		g/hr	nd	0.1	nd	0.1	nd	0.1	nd	0.1	nd	0.02	nd	0.02	nd	0.02		0.02						
23	Mercury		g/hr	nd	0.1	nd	0.1	nd	0.1	nd	0.10	nd	0.02	nd	0.02	nd	0.02		0.02						
24	Silver		g/hr	nd	0.01	nd	0.01	nd	0.01	nd	0.01	nd	0.003	nd	0.003	nd	0.003		0.003						
25	Thallium		g/hr	nd	0.09	nd	0.09	nd	0.09	nd	0.09	nd	0.02	nd	0.02	nd	0.02		0.02						
26																									
27	Stack Gas Flowrate		dscfm		13700		14300		14000		14000														
28	Oxygen		%		9.4		9.4		9.4		9.4														
29																									
30	Thermal Feedrate		MMBtu/hr		29.0		29.8		28.6		29.1		10.1		10.2		10.1		10.2		39.1		40.0		38.8
31	Estimated Firing Rate		MMBtu/hr																						
32																									
33	*Feedrate MTEC Calculations*																								
34	Ash		mg/dscm		0.5		7.7		6.5		4.9		7.3		7.7		0.3		5.1		7.8		15.3		6.8
35	Chlorine		ug/dscm		93274479		89812182		88048820		90378494		11376660		10312605		11109825		10933030		104651139		100124787		99158645
36	Antimony		ug/dscm	100	3.1	100	3.0	100	3.0		3.0	100	0.5	100	0.5	100	0.5		0.5	100	3.6	100	3.5	100	3.6
37	Arsenic		ug/dscm	100	3.1	100	3.0	100	3.0		3.0	100	0.5	100	0.5	100	0.5		0.5	100	3.6	100	3.5	100	3.6
38	Barium		ug/dscm	100	0.5	100	0.4	100	0.5		0.5		0.1		0.2		0.1		0.2	77	0.6	67	0.7	82	0.6
39	Beryllium		ug/dscm	100	0.4	100	0.3	100	0.4		0.4	100	0.1	100	0.0	100	0.1		0.1	100	0.4	100	0.4	100	0.4
40	Cadmium		ug/dscm	100	2.1	100	2.0	100	2.6		2.2	100	0.4	100	0.4	100	0.4		0.4	100	2.5	100	2.4	100	3.0
41	Chromium		ug/dscm	100	1.0	100	1.0	100	1.0		1.0		0.3		0.4		0.3		0.3	77	1.4	72	1.4	79	1.3
42	Lead		ug/dscm	100	5.2	100	5.0	100	5.1		5.1	100	1.0	100	1.0	100	1.0		1.0	100	6.2	100	6.0	100	6.1
43	Silver		ug/dscm	100	5.2	100	5.0	100	5.1		5.1	100	1.0	100	1.0	100	1.0		1.0	100	6.2	100	6.0	100	6.1
44	Mercury		ug/dscm	100	0.5	100	0.5	100	0.5		0.5	100	0.2	100	0.1	100	0.2		0.2	100	0.7	100	0.6	100	0.7
45	Thallium		ug/dscm	100	4.7	100	4.5	100	4.6		4.6	100	1.0	100	1.0	100	1.0		1.0	100	5.7	100	5.5	100	5.6
46																									
47	SVM		ug/dscm		7.3		7.0		7.7		7.3		1.5		1.4		1.4		1.4	100	8.7	100	8.4	100	9.1
48	LVM		ug/dscm		4.5		4.3		4.4		4.4		0.9		0.9		0.8		0.9	94	5.4	93	5.2	95	5.2
49																									
50																									
51																									
52	**845C2**	**Trial burn**			R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg		R1		R2		R3
53																									
54	Feedstream Number				F1		F1		F1		F1		F2		F2		F2		F2		F3		F3		F3
55	Feed Class				Liq HW		Liq HW		Liq HW		Liq HW		Process Gas		Process Gas		Process Gas		Process Gas		NG		NG		NG
56	Feed Class 2				HW		HW		HW		HW		MF		MF		MF		MF						
57	Feedstream Description				Epi Heavies		Epi Heavies		Epi Heavies		Epi Heavies		Vapor		Vapor		Vapor		Vapor		Nat gas		Nat gas		Nat gas
58	Feed Rate		lb/hr		5989		5989		5962		5980.0		232.9		232.9		232.9		232.9						
59	Viscosity		cps		2.2		2		2.1		2.1														
60	Heating Value		Btu/lb		6200		6100		6400		6233.0														

	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																											
2																											
3																											
4		Cond Avg		R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg	
5																											
6				F3		F3		F3		F3		F4		F4		F4		F4		F5		F5		F5		F5	
7				Process Gas		Process Gas		Process Gas		Process Gas		NG		NG		NG		NG		Spike		Spike		Spike		Spike	
8		HW		MF		MF		MF		MF										Spike		Spike		Spike		Spike	
9				Vapor		Vapor		Vapor		Vapor		Nat Gas		Nat Gas		Nat Gas		Nat Gas		Spike		Spike		Spike		Spike	
10				238.8		238.8		238.8		238.8										41		41		41		41	
11																											
12																											
13																											
14																				1.6		1.6		1.6		1.6	
15				57		57		57		57																	
16																											
17																											
18																											
19																											
20																											
21																				9.8		10.0		10.0		9.9	
22																				39.5		40.2		40.2		40.0	
23																											
24																											
25																											
26																											
27																											
28																											
29																											
30		39.3										5.3		5.3		5.3		5.3									
31																											
32																											
33																											
34		10.0																		37.7		36.1		36.9		36.9	
35		101311523.6		1342587		1286255		1313817		1314220																	
36	100	3.6																									100
37	100	3.6																									100
38	75	0.6																									77
39	100	0.4																									100
40	100	2.6																									100
41	76	1.3																		509.5		494.6		507.2		503.6	0.2
42	100	6.1																		2051.4		1998.6		2041.4		2030.1	0.3
43	100	6.1																									100
44	100	0.7																									100
45	100	5.6																									100
46																											
47	100	8.7																		2051.4		1998.6		2041.4		2030.1	0
48	94	5.3																		509.5		494.6		507.2		503.6	1
49																											
50																											
51																											
52		Cond Avg		R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg									
53																											
54		F3		F4		F4		F4		F4		F5		F5		F5		F5									
55		NG		Spike		Spike		Spike		Spike		Total		Total		Total		Total									
56				Spike		Spike		Spike		Spike		Total		Total		Total		Total									
57		Nat gas		Spike		Spike		Spike		Spike		Total		Total		Total		Total									
58				45		45		45		45																	
59																											
60																											

	BB	BC	BD	BE	BF	BG	BH
1							
2							
3							
4	R1		R2		R3		Cond Avg
5							
6	F6		F6		F6		F6
7	Total		Total		Total		Total
8	Total		Total		Total		Total
9	Total		Total		Total		Total
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30	44.4		45.3		44.1		44.6
31	50.5		52.7		51.6		51.6
32							
33							
34	45.5		51.5		43.6		46.9
35	105993726.2		101411041.7		100472462.5		102625743.5
36	3.6	100	3.5	100	3.6	100	3.6
37	3.6	100	3.5	100	3.6	100	3.6
38	0.6	67	0.7	82	0.6	75	0.6
39	0.4	100	0.4	100	0.4	100	0.4
40	2.5	100	2.4	100	3.0	100	2.6
41	510.8	0.2	495.9	0.2	508.5	0.2	505.0
42	2057.6	0.3	2004.6	0.3	2047.5	0.3	2036.2
43	6.2	100	6.0	100	6.1	100	6.1
44	0.7	100	0.6	100	0.7	100	0.7
45	5.7	100	5.5	100	5.6	100	5.6
46							
47	2060.1	0	2007.0	0	2050.5	0	2039.2
48	514.9	1	499.8	1	512.4	1	509.0
49							
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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
61	Density		lb/gal		11		11		11		11														
62	Ash		lb/hr		0.1		0.093		0.11		0.1														
63	Chlorine		lb/hr		3670		3650		3640		3653.3		56		56		56		56						
64																									
65	Stack Gas Flowrate		dscfm		16334		16439		16311		16361.3														
66	Oxygen		%		6		5.9		5.9		5.9														
67																									
68	Thermal Feedrate		MMBtu/hr		37.1		36.5		38.2		37.3										3.2		3.2		3.2
69	Estimated Firing Rate		MMBtu/hr																						
70																									
71	*Feedrate MTEC Calculations*																								
72	Ash		mg/dscm		1.5		1.4		1.7		1.5														
73	Chlorine		ug/dscm		56069729		55041052		55321004		55474790		855560		844465		851092		850351						
74																									
75																									
76																									
77	**845C3**		**Risk burn**		R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg		R1		R2		R3
78																									
79	Feedstream Number				F1		F1		F1		F1		F2		F2		F2		F2						
80	Feed Class				Liq HW		Liq HW		Liq HW		Liq HW		Liq HW		Liq HW		Liq HW		Liq HW						
81	Feed Class 2																				HW		HW		HW
82	Feedstream Description				Allyl Tars Mix		Allyl Tars Mix		Allyl Tars Mix		Allyl Tars Mix		Epi Heavies		Epi Heavies		Epi Heavies		Epi Heavies						
83	Feed Rate		lb/hr		2476		2477		2475		2476.0		2806		2804		2805		2805.0						
84	Viscosity		cps		1.7		1.8		1.6		1.7		2		2.1		2.1		2.07						
85	Heating Value		Btu/lb		7050		6970		7140		7053.3		6320		6270		6360		6316.7						
86	Density		lb/gal		10.8		10.8		10.8		10.8		11		11		11		11						
87	Ash		lb/hr		1.14		0.357		0.252		0.58		0.528		0.0729		0.861		0.487						
88	Chlorine		lb/hr		1500		1530		1520		1516.7		1700		1690		1670		1686.7						
89	Antimony		g/hr		0.0978		0.111	nd	0.027		0.08	nd	0.03	nd	0.03	nd	0.03		0.03						
90	Arsenic		g/hr		2.25	nd	0.22	nd	0.22		0.90	nd	0.051	nd	0.057	nd	0.076		0.059						
91	Barium		g/hr		0.022		0.00574		0.0059		0.01		0.00614	nd	0.0043		0.00455		0.005						
92	Beryllium		g/hr	nd	0.0032	nd	0.0032	nd	0.0032		0.0032	nd	0.0037	nd	0.0037	nd	0.00037		0.0037						
93	Cadmium		g/hr		0.033		0.0289		0.027		0.030	nd	0.02	nd	0.02	nd	0.02		0.020						
94	Chromium		g/hr		1.26		0.252		0.184		0.57		0.0103		0.0113	nd	0.0078		0.010						
95	Lead		g/hr		0.0765		0.058	nd	0.044		0.06	nd	0.049	nd	0.049	nd	0.049		0.049						
96	Mercury		g/hr	nd	0.45	nd	0.45	nd	0.45		0.45	nd	0.076	nd	0.076	nd	0.076		0.076						
97	Nickel		g/hr		10		0.528		0.923		3.82	nd	0.12	nd	0.12	nd	0.12		0.012						
98	Selenium		g/hr	nd	0.047	nd	0.047	nd	0.047		0.047		0.144		0.13		0.147		0.14						
99	Silver		g/hr	nd	0.0063	nd	0.0063	nd	0.0063		0.0063	nd	0.0071	nd	0.0071	nd	0.0071		0.0071						
100	Thallium		g/hr	nd	0.041	nd	0.041	nd	0.0591		0.041	nd	0.046	nd	0.046	nd	0.046		0.046						
101	Zinc		g/hr		2.86		2.46		0.986		2.10		0.452		0.175		1.07		0.57						
102																									
103	Stack Gas Flowrate		dscfm		14580		13550		14100		14076.7														
104	Oxygen		%		11.9		11.8		11.6		11.8														
105																									
106	Thermal Feedrate		MMBtu/hr		17.5		17.3		17.7		17.5		17.7		17.6		17.8		17.7		35.2		34.8		35.5
107	Estimated Firing Rate		MMBtu/hr																		42.1		39.6		42.1
108																									
109	*Feedrate MTEC Calculations*																								
110	Ash		mg/dscm		32.2		10.7		7.1		16.7		14.9		2.2		24.3		13.8	0	47.1	0	12.9	0	31.4
111	Chlorine		ug/dscm		42319307		45942065		42928214		43729862		47961881		50746464		47164551		48624299	0	90281188	0	96688529	0	90092766
112	Antimony		ug/dscm		6.1		7.3		1.7		5.0	100	1.9	100	2.0	100	1.9		1.9	23	7.9	21	9.3	53	3.5
113	Arsenic		ug/dscm		139.8	100	14.6	100	13.7		56.0	100	3.2	100	3.8	100	4.7		3.9	2	143.0	100	18.3	100	18.4
114	Barium		ug/dscm		1.4		0.4		0.4		0.7		0.4		0.3		0.3		0.3	0	1.7	0	0.7	0	0.7
115	Beryllium		ug/dscm	100	0.2	100	0.2	100	0.2		0.2	100	0.2	100	0.2	100	0.0		0.2	100	0.4	100	0.5	100	0.2
116	Cadmium		ug/dscm		2.1		1.9		1.7		1.9	100	1.2	100	1.3	100	1.2		1.3	38	3.3	41	3.2	43	2.9
117	Chromium		ug/dscm		78.3		16.7		11.4		35.5		0.6		0.7	100	0.5		0.6	0	78.9	0	17.4	4	11.9
118	Lead		ug/dscm		4.8		3.8	100	2.7		3.8	100	3.0	100	3.2	100	3.0		3.1	39	7.8	46	7.1	100	5.8
119	Mercury		ug/dscm	100	28.0	100	29.8	100	28.0		28.6	100	4.7	100	5.0	100	4.7		4.8	100	32.7	100	34.8	100	32.7
120	Nickel		ug/dscm		621.4		34.9		57.4		237.9	100	7.5	100	7.9	100	7.5		7.6	1	628.9	19	42.9	12	64.9

	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
61																											
62																											
63				14.2		14.2		14.2		14.2																	
64																											
65																											
66																											
67																											
68		3.2										40.3		39.7		41.4		40.5									
69												77.8		78.8		78.2		78.3									
70																											
71																											
72												1.5		1.4		1.7		1.5									
73				216946		214132		215813		215625		57142234.4		56099649.6		56387908.8		56540766.0									
74																											
75																											
76																											
77		Cond Avg		R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg	
78																											
79				F3		F3		F3		F3		F4		F4		F4		F4		F5		F5		F5		F5	
80				Process Gas		Process Gas		Process Gas		Process Gas		NG		NG		NG		NG		Total		Total		Total		Total	
81		HW		MF		MF		MF		MF										Total		Total		Total		Total	
82				Vapor		Vapor		Vapor		Vapor		Nat Gas		Nat Gas		Nat Gas		Nat Gas		Total		Total		Total		Total	
83				215.4		215.4		215.4		215.4																	
84																											
85																											
86																											
87																											
88				51.7		51.7		51.7		51.7																	
89																											
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105																											
106		35.2																		35.2		34.8		35.5		35.2	
107		41.3																								41.3	
108																											
109																											
110	0	30.5																		47.1		12.9		31.4		30.5	
111	0	92354160.8		1458605		1552421		1460124		1488944										91739793		98240950		91552890		93844544.4	
112	27	6.9																	23	7.9	21	9.3	53	3.5	27	6.9	
113	22	59.9																	2	143.0	100	18.3	100	18.4	22	59.9	
114	0	1.0																	0	1.7	0	0.7	0	0.7	0	1.0	
115	100	0.4																	100	0.4	100	0.5	100	0.2	100	0.4	
116	40	3.2																	38	3.3	41	3.2	43	2.9	40	3.2	
117	0	36.1																	0	78.9	0	17.4	4	11.9	0	36.1	
118	58	6.9																	39	7.8	46	7.1	100	5.8	58	6.9	
119	100	33.4																	100	32.7	100	34.8	100	32.7	100	33.4	
120	3	245.5																	1	628.9	19	42.9	12	64.9	3	245.5	

	BB	BC	BD	BE	BF	BG	BH
61							
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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
121	Selenium		ug/dscm	100	2.9	100	3.1	100	2.9		3.0		8.9		8.6		9.1		8.9	25	11.9	27	11.7	24	12.1
122	Silver		ug/dscm	100	0.4	100	0.4	100	0.4		0.4	100	0.4	100	0.5	100	0.4		0.5	100	0.8	100	0.9	100	0.8
123	Thallium		ug/dscm	100	2.5	100	2.7	100	3.7		3.0	100	2.9	100	3.0	100	2.9		2.9	100	5.4	100	5.8	100	6.5
124	Zinc		ug/dscm		177.7		162.7		61.3		133.9		28.1		11.6		66.6		35.4	0	205.8	0	174.3	0	127.9
125																									
126	SVM		ug/dscm		6.8		5.7		4.4		5.7		4.3		4.6		4.3		4.4	39	11.1	44	10.3	81	8.7
127	LVM		ug/dscm		218.3		31.4		25.3		91.7		4.0		4.8		5.2		4.7	2	222.4	52	36.2	64	30.6
128																									
129	**Tier I Feedrate Limits**																								
130	Antimony		g/hr								150														
131	Arsenic		g/hr								0.55														
132	Barium		g/hr								25000														
133	Beryllium		g/hr								1														
134	Cadmium		g/hr								1.3														
135	Lead		g/hr								45														
136	Mercury		g/hr								150														
137	Silver		g/hr								1500														
138	Thallium		g/hr								250														

	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
121	25	11.9																	25	11.9	27	11.7	24	12.1	25	11.9	
122	100	0.9																	100	0.8	100	0.9	100	0.8	100	0.9	
123	100	5.9																	100	5.4	100	5.8	100	6.5	100	5.9	
124	0	169.3																	0	205.8	0	174.3	0	127.9	0	169.3	
125																											
126	53	10.0																	39	11.1	44	10.3	81	8.7	53	10.0	
127	15	96.4																	2	222.4	52	36.2	64	30.6	15	96.4	
128																											
129																											
130																											
131																											
132																											
133																											
134																											
135																											
136																											
137																											
138																											

	A	B	C
1	**Process Information**		
2			
3	**845C1**	Trial burn	Cond Avg
4			Liquid waste
5	Comb Temp	^{o}F	2591.6
6	Prod Rate	Mlb/hr	37.97
7	T-214 Scrubber Effluent pH	pH	8.56
8	T-214 Scrubber Effluent Flow	gpm	54.2
9	T-214 Recycle Pressure	psig	25.95
10	T-214 Scrubber L/G	gal/Macf	21.5
11			
12	**845C2**	Trial burn	Cond Avg
13			
14	Comb Temp	^{o}F	1973.6
15	Prod Rate	Mlb/hr	30.1
16	T-214 Scrubber Effluent pH	pH	9.54
17	T-214 Scrubber Effluent Flow	gpm	68.4
18	T-214 Recycle Pressure	psig	25.95
19	T-214 Scrubber L/G	gal/Macf	24.9
20			
21	**845C3**	Risk burn	Cond Avg
22			
23	Comb Temp	^{o}F	2357.6
24	Prod Rate	Mlb/hr	31.2
25	T-214 Scrubber Effluent pH	pH	9.52
26	T-214 Scrubber Effluent Flow	gpm	71.05
27	T-214 Recycle Pressure	psig	29.88
28	T-214 Scrubber L/G	gal/Macf	24.91

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	**PCDD/PCDF**																	
2	N																	
3	Facility Name and ID:		Dow Chemical Company, Freeport, TX															
4	Condition ID:		845C3															
5	Condition/Test Date:		Risk burn, above normal operating of liq waste feed rate, normal comb temp, April 14, 1998															
6																		
7			I-TEF			Run 1					Run 2					Run 3		
8			Wght Fact		Total	TEQ	Total	TEQ		Total	TEQ	Total	TEQ		Total	TEQ	Total	TEQ
9					Full ND	Full ND	1/2 ND	1/2 ND		Full ND	Full ND	1/2 ND	1/2 ND		Full ND	Full ND	1/2 ND	1/2 ND
10	Detected in sample volume (pg)																	
11		2,3,7,8-TCDD	1		7	7	7	7	nd	5	5	3	3	nd	5	5	3	3
12		Total TCDD	0		110	0	110	0		23	0	23	0		23	0	23	0
13		1,2,3,7,8-PCDD	0.5		20	10	20	10		11	6	11	6		13	7	13	7
14		Total PCDD	0		170	0	170	0		73	0	73	0		81	0	81	0
15		1,2,3,4,7,8-HxCDD	0.1		74	7	74	7		41	4	41	4		43	4	43	4
16		1,2,3,6,7,8-HxCDD	0.1		50	5	50	5		31	3	31	3		37	4	37	4
17		1,2,3,7,8,9-HxCDD	0.1		19	2	19	2		15	2	15	2		15	2	15	2
18		Total HxCDD	0		440	0	440	0		280	0	280	0		280	0	280	0
19		1,2,3,4,6,7,8-HpCDD	0.01		640	6	640	6		450	5	450	5		440	4	440	4
20		Total HpCDD	0		1100	0	1100	0		820	0	820	0		800	0	800	0
21		OCDD	0.001		8600	9	8600	9		6300	6	6300	6		4000	4	4000	4
22		2,3,7,8-TCDF	0.1		330	33	330	33		230	23	230	23		320	32	320	32
23		Total TCDF	0		1700	0	1700	0		1100	0	1100	0		1600	0	1600	0
24		1,2,3,7,8-PCDF	0.05		610	31	610	31		510	26	510	26		730	37	730	37
25		2,3,4,7,8-PCDF	0.5		430	215	430	215		360	180	360	180		490	245	490	245
26		Total PCDF	0		3200	0	3200	0		2900	0	2900	0		3400	0	3400	0
27		1,2,3,4,7,8-HxCDF	0.1		2500	250	2500	250		2400	240	2400	240		2600	260	2600	260
28		1,2,3,6,7,8-HxCDF	0.1		1300	130	1300	130		1400	140	1400	140		1400	140	1400	140
29		2,3,4,6,7,8-HxCDF	0.1		720	72	720	72		700	70	700	70		770	77	770	77
30		1,2,3,7,8,9-HxCDF	0.1		270	27	270	27		300	30	300	30		360	36	360	36
31		Total HxCDF	0		14000	0	14000	0		14000	0	14000	0		14000	0	14000	0
32		1,2,3,4,6,7,8-HpCDF	0.01		32000	320	32000	320		28000	280	28000	280		29000	290	29000	290
33		1,2,3,4,7,8,9-HpCDF	0.01		3700	37	3700	37		3700	37	3700	37		3400	34	3400	34
34		Total HCDF	0		51000	0	51000	0		46000	0	46000	0		47000	0	47000	0
35		OCDF	0.001		150000	150	150000	150		110000	110	110000	110		76000	76	76000	76
36																		
37		Gas sample volume (dscf)				134.18	134.18	134.18			127.60	127.60	127.60			130.42	130.42	130.42
38		O2 (%)				11.90	11.90	11.90			11.8	11.8	11.8			11.60	11.60	11.60
39																		
40		PCDD/PCDF (pg in sample)				1310.80	230320.0	1310.80			1165.500	181496.0	1163.000			1255.90	147184.0	1253.40
41		PCDD/PCDF (ng/dscm @ 7% O2)		0.0		0.53	93.32	0.53	0.4		0.49	76.49	0.49	0.4		0.51	59.39	0.51
42																		
43		TEQ Cond Avg	0.51															
44		Total Cond Avg	76.40															