

US EPA ARCHIVE DOCUMENT

	B	C
1	Source Description	
2		
3	Phase I ID No.	600
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.	B-33 Rotary Kiln Incinerator
10	Other Sister Facilities	None
11	Number of Sister Facilities	0
12	Combustor Class	Onsite incinerator
13	Combustor Type	Rotary kiln
14	Combustor Characteristics	Manufactured by MAN-GHH. Model 2MOF29646-G1-RN. Designed to handle numerous waste streams in various combinations.
15	Capacity (MMBtu/hr)	
16	Soot Blowing	
17	APCS Detailed Acronym	WHB/Q/IWS/CB
18	APCS General Class	WHB, WQ, IWS, CB
19	APCS Characteristics	Quench, absorber, ionizing wet scrubbers (manufactured by Ceilcote, 4 stages of ionizing wet scrubbers), afterburner, carbon bed absorber (Donau Carbon), waste heat boiler. IWS and carbon bed added recently (2000 testing)
20	Hazardous Wastes	Liq, solid
21	Haz Waste Description	Glycol PDC Bottoms (D-460), Allyl PDC Crude (D-450)
22	Supplemental Fuel	Natural gas
23		
24	Stack Characteristics	
25	Diameter (ft)	5.00
26	Height (ft)	120
27	Gas Velocity (ft/sec)	9.2
28	Gas Temperature (°F)	147.8
29		
30	Permitting Status	Tier I for all metals???
31	HWC Burn Status (Date if Terminated)	

	B	C
1	Condition Description	
2		
3	600C10	
4		
5	Report Name/Date	DRE Burn Report, December 2000
6	Report Prepare	METCO Environmental
7	Testing Firm	Focus Environmental, Inc.
8	Testing Dates	September 15, 2000
9	Cond Dates	Sep-00
10	Condition Descr	Trial burn, min temp, max gas velocity
11	Content	CO, HC, DRE
12		
13	600C11	
14		
15	Report Name/Date	Risk Burn Report, February 2001
16	Report Prepare	METCO Environmental
17	Testing Firm	Focus Environmental, Inc.
18	Testing Dates	September 11-12, 2000
19	Cond Dates	Sep-00
20	Condition Descr	Risk burn, normal temp, normal feedrate
21	Content	CO, metals, PCDD/F
22		
23	600C1	
24		
25	Report Name/Date	Rotary Kiln Application Trial Burn Results, RCRA Permit HW-50161-001, Dow Chemical Company, Freeport, Texas
26	Report Prepare	Unknown
27	Testing Firm	Unknown
28	Cond Descr	Trial burn, Avg. Temp to meet 99.99% DRE
29	Testing Dates	
30	Cond Dates	Nov-88
31		
32	600C2	
33		
34	Report Name/Date	Rotary Kiln Application Trial Burn Results, RCRA Permit HW-50161-001, Dow Chemical Company, Freeport, Texas
35	Report Prepare	Unknown
36	Testing Firm	Unknown
37	Cond Descr	Trial burn, MAX. heat duty, MIN. INCINERATOR RES. TIME
38	Testing Dates	
39	Cond Dates	Nov-88
40		
41	600C3	
42		
43	Report Name/Date	Rotary Kiln Supplemental Trial Burn Results, RCRA Permit HW-50161-001, December 14, 1995; Compliance Test Report, Texas Rotary Kiln, Dow Freeport TX, Sampling Date: July 11-13, 1995
44	Report Prepare	Dow
45	Testing Firm	
46	Cond Descr	Metals and ash permit testing
47	Testing Dates	July 11-13, 1995
48	Cond Dates	Jul-95

	B	C	D	E	F	G	H	I	J	K	L	M
1	Stack Gas Emissions 1											
2												
3		Comments	Units	7% O2								
4												
5												
6	600C10	Trial Burn				R1		R2		R3		Cond Avg
7												
8	CO (RA)		ppmv	n		2.66		2.79		2.57		2.67
9	CO (MHRA)		ppmv	n		3.48		3.57		3.11		3.39
10	HC (MHRA)		ppmv	n	nd	0.1	nd	0.1		0.1		0.10
11												
12	POHC DRE	1,4-dichlorobenzene										
13	POHC Feedrate		lb/hr			59.3		59.6		59.7		
14	Emission Rate	E1	lb/hr	nd		3.46E-05	nd	3.27E-05	nd	3.32E-05		
15	DRE	E1	%			99.999942		99.999945		99.999944		
16												
17	POHC DRE	1,2-dichlorobenzene										
18	POHC Feedrate		lb/hr			60		60		60		
19	Emission Rate	E1	lb/hr	nd		3.46E-05	nd	3.27E-05	nd	3.32E-05		
20	DRE	E1	%			99.999942		99.999945		99.999945		
21												
22	Sampling Train	DRE	E1									
23	Stack Gas Flowrate		dscfm			37911		35961		37596		37156
24	O2		%			14.02		14.05		13.9		13.99
25	Moisture		%									
26	Temperature		°F									
27												
28	CO (RA)	E1	ppmv	y		5.3		5.6		5.1		5.3
29	CO (MHRA)	E1	ppmv	y		7.0		7.2		6.1		6.8
30	HC (MHRA)	E1	ppmv	y		0.2		0.2		0.2		0.2
31												
32	600C11	Risk Burn				R1		R2		R3		Cond Avg
33												
34	CO (RA)		ppmv	n		3.83		3.77		3.33		
35	CO (MHRA)		ppmv	n		7.65		4.62		3.72		
36												
37	Aluminum		g/hr			1.71	nd	2.1	nd	1.8		
38	Antimony		g/hr	nd		0.098	nd	0.16	nd	0.1		
39	Arsenic		g/hr	nd		0.023	nd	0.054	nd	0.029		
40	Barium		g/hr			0.0607		0.0926	nd	1.8		
41	Beryllium		g/hr	nd		0.00055	nd	0.0018	nd	0.00083		
42	Cadmium		g/hr	nd		0.043		0.0444	nd	0.02		
43	Calcium		g/hr			15.1	nd	29	nd	28		
44	Chromium		g/hr			0.0883	nd	0.081	nd	0.089		
45	Cobalt		g/hr	nd		0.013	nd	0.04	nd	0.013		
46	Copper		g/hr	nd		0.53		0.164	nd	0.081		
47	Iron		g/hr			2.53	nd	1.6	nd	1.6		
48	Lead		g/hr			0.191		0.128	nd	0.072		
49	Lithium		g/hr	nd		0.057	nd	0.061	nd	0.06		
50	Magnesium		g/hr			1.31	nd	10	nd	9.6		
51	Manganese		g/hr	nd		0.97	nd	0.094	nd	0.08		
52	Mercury		g/hr	nd		0.0027	nd	0.003	nd	0.0026		
53	Molybdenum		g/hr	nd		0.23	nd	0.26	nd	0.24		
54	Nickel		g/hr	nd		0.1		0.132	nd	0.039		
55	Phosphorus		g/hr	nd		8.5	nd	9.1	nd	12		
56	Potassium		g/hr			10.9	nd	8.5	nd	7.4		
57	Selenium		g/hr	nd		0.099	nd	0.13	nd	0.052		
58	Silver		g/hr	nd		0.0038	nd	0.012	nd	0.004		
59	Sodium		g/hr			105	nd	84	nd	83		
60	Strontium		g/hr			0.0531	nd	0.034	nd	0.036		
61	Thallium		g/hr	nd		0.034	nd	0.038	nd	0.00593		
62	Vanadium		g/hr	nd		0.13	nd	0.16	nd	0.091		
63	Zinc		g/hr			12.7	nd	18	nd	1.8		
64	Chromium (Hex)		g/hr			0.11		0.14		0.13		
65												
66	Sampling Train	Metals	E1									
67	Stack Gas Flowrate		dscfm			29058		30220		29771		29683.0
68	O2		%			10.24		10.29		10.81		10.4
69	Moisture		%									
70	Temperature		°F									
71	Sampling Train	Cr+6	E2									

	B	C	D	E	F	G	H	I	J	K	L	M
72	Stack Gas Flowrate		dscfm			29023		29256		29242		29173.7
73	O2		%			10.24		10.29		10.81		10.4
74	Moisture		%									
75	Temperature		°F									
76												
77	Sampling Train	PCDD/PCDF	E3									
78	Stack Gas Flowrate		dscfm			29986		31091		30518		30531.7
79	O2		%			10		9.9		10.2		10.0
80	Moisture		%									
81	Temperature		°F									
82												
83	CO (RA)	E1	ppmv	y		5.0		4.9		4.6		4.8
84	CO (MHRA)	E1	ppmv	y		10.0		6.0		5.1		7.0
85												
86	Aluminum	E1	ug/dscm	y		45.1	nd	53.5	nd	48.9		49.17
87	Antimony	E1	ug/dscm	y	nd	2.6	nd	4.1	nd	2.7		3.13
88	Arsenic	E1	ug/dscm	y	nd	0.6	nd	1.4	nd	0.8		0.92
89	Barium	E1	ug/dscm	y		1.6		2.4	nd	48.9		17.63
90	Beryllium	E1	ug/dscm	y	nd	0.0	nd	0.0	nd	0.0		0.03
91	Cadmium	E1	ug/dscm	y	nd	1.1		1.1	nd	0.5		0.94
92	Calcium	E1	ug/dscm	y		398.2	nd	738.8	nd	761.0		632.65
93	Chromium	E1	ug/dscm	y		2.3	nd	2.1	nd	2.4		2.27
94	Cobalt	E1	ug/dscm	y	nd	0.3	nd	1.0	nd	0.4		0.57
95	Copper	E1	ug/dscm	y	nd	14.0		4.2	nd	2.2		6.79
96	Iron	E1	ug/dscm	y		66.7	nd	40.8	nd	43.5		50.32
97	Lead	E1	ug/dscm	y		5.0		3.3	nd	2.0		3.42
98	Lithium	E1	ug/dscm	y	nd	1.5	nd	1.6	nd	1.6		1.56
99	Magnesium	E1	ug/dscm	y		34.5	nd	254.7	nd	260.9		183.40
100	Manganese	E1	ug/dscm	y	nd	25.6	nd	2.4	nd	2.2		10.05
101	Mercury	E1	ug/dscm	y	nd	0.1	nd	0.1	nd	0.1		0.07
102	Molybdenum	E1	ug/dscm	y	nd	6.1	nd	6.6	nd	6.5		6.40
103	Nickel	E1	ug/dscm	y	nd	2.6		3.4	nd	1.1		2.35
104	Phosphorus	E1	ug/dscm	y	nd	224.1	nd	231.8	nd	326.1		260.70
105	Potassium	E1	ug/dscm	y		287.4	nd	216.5	nd	201.1		235.03
106	Selenium	E1	ug/dscm	y	nd	2.6	nd	3.3	nd	1.4		2.45
107	Silver	E1	ug/dscm	y	nd	0.1	nd	0.3	nd	0.1		0.17
108	Sodium	E1	ug/dscm	y		2768.9	nd	2139.9	nd	2255.8		2388.18
109	Strontium	E1	ug/dscm	y		1.4	nd	0.9	nd	1.0		1.08
110	Thallium	E1	ug/dscm	y	nd	0.9	nd	1.0	nd	0.2		0.68
111	Vanadium	E1	ug/dscm	y	nd	3.4	nd	4.1	nd	2.5		3.33
112	Zinc	E1	ug/dscm	y		334.9	nd	458.5	nd	48.9		280.79
113	Chromium (Hex)	E2	ug/dscm	y		2.9		3.6		3.5		3.33
114	SVM	E1	ug/dscm	y	18	6.2		4.4	43	1.3		3.9
115	LVM	E1	ug/dscm	y	21	2.95	100	3.48	100	3.23		3.2

	B	C	D	E	F	G	H	I	J	K	L	M	Y
1	Stack Gas Emissions 2												
2													
3													
4	600C1					R1		R2		R3		Cond Avg	
5													
6	PM	E1	gr/dscf	y		0.0120		0.0110		0.0080		0.0103	
7	HCl	E1	ppmv	y		0.3		0.8		0.3		0.5	
8													
9	Sampling Train	PM/HCl	E1										
10	Stack Gas Flowrate		dscfm			28887.4		28357.7		29064.0			
11	O2		%			14.4		13.6		14.1			
12	Moisture		%			15.9		16.0		15.8			
13	Temperature		°F			131.9		131.9		131.9			
14													
15	1,1-DICHLOROETHANE	DRE	%			99.99993		99.99997		99.99993			
16	Carbon Tetrachloride	DRE	%			99.99995		99.99997		99.99996			
17	Trichlorofluoromethane	DRE	%			99.99997		99.99998		99.99998			
18													
19	600C2					R1		R2		R3		Cond Avg	
20													
21	PM	E1	gr/dscf	y		0.0040		0.0060		0.0040		0.0047	
22	HCl	E1	ppmv	y		2.0		2.0		0.7		1.6	
23													
24	Sampling Train	Halogens	E1										
25	Stack Gas Flowrate		dscfm			35597.2		36126.9		36621.3			
26	O2		%			13.3		13.8		13.3			
27	Moisture		%			17.8		17.5		17.7			
28	Temperature		°F			135.0		135.9		136.9			
29													
30	1,1-Dichloroethane	DRE	%			99.99997		99.99996		99.99996			
31	Carbon Tetrachloride	DRE	%			99.99998		99.99998		99.99999			
32													
33	600C3					R1		R2		R3		Cond Avg	
34													
35	PM	E2	gr/dscf	y		0.0030		0.0030		0.0030		0.0	
36	Arsenic	E1	ug/dscm	y		6.3		4.9		5.4		5.6	
37	Cadmium	E1	ug/dscm	y		168.5		101.8		113.8		128.0	
38	Chromium	E1	ug/dscm	y		5.8		15.0		11.4		10.7	
39	Lead	E1	ug/dscm	y		60.0		51.2		2.8		38.0	
40	SVM	E1	ug/dscm	y		228.4		152.9		116.7		166.0	
41	LVM	E1	ug/dscm	y		12.1		20.0		16.8		16.3 No Be	
42													
43	Sampling Train	Metals	E1										
44	Stack Gas Flowrate		dscfm			24000.0		23167.0		23167.0			
45	O2		%			8.0		8.0		8.5			
46	Moisture		%			24.3		23.5		23.4			
47	Temperature		°F			149.0		147.0		147.0			
48													
49	Sampling Train	Particulate	E2										
50	Stack Gas Flowrate		dscfm			23833.0		23167.0		24167.0			
51	O2		%			8.0		8.0		8.5			
52	Moisture		%			24.6		23.5		20.9			
53	Temperature		°F			150.0		147.0		147.0			

	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	Feedstream 1																								
2																									
3																									
4	600C10	Trial burn																							
5	Feedstream Number																								
6	Feed Class																								
7	Feed Class 2																								
8	Feedstream Description																								
9	Feed Rate	lb/hr																							
10	Heating Value	Btu/lb																							
11	Density	lb/gal																							
12	Viscosity	cP @ 100F																							
13	Ash	lb/hr																							
14	Chlorine	lb/hr																							
15	Stack Gas Flowrate	dsdcm																							
16	Oxygen	%																							
17	Thermal Feedrate	MMBtu/hr																							
18	Estimated Firing Rate	MMBtu/hr																							
19																									
20																									
21																									
22																									
23	Feedrate M/TEC Calculations																								
24	Ash	mg/dscm																							
25	Chlorine	ug/dscm																							
26																									
27	600C11	Risk burn																							
28	Feedstream Number																								
29	Feed Class																								
30	Feed Class 2																								
31	Feedstream Description																								
32	Feed Rate	lb/hr																							
33	Heating Value	Btu/lb																							
34	Density	lb/gal																							
35	Viscosity	cP @ 100F																							
36	Ash	lb/hr																							
37	Chlorine	lb/hr																							
38	Antimony	g/hr																							
39	Arsenic	g/hr																							
40	Barium	g/hr																							
41	Beryllium	g/hr																							
42	Cadmium	g/hr																							
43	Chromium	g/hr																							
44	Lead	g/hr																							
45	Mercury	g/hr																							
46	Nickel	g/hr																							
47	Selenium	g/hr																							
48	Silver	g/hr																							
49	Thallium	g/hr																							
50	Zinc	g/hr																							
51																									
52																									
53	Stack Gas Flowrate	dsdcm																							
54	Oxygen	%																							
55	Thermal Feedrate	MMBtu/hr																							
56	Estimated Firing Rate	MMBtu/hr																							
57																									
58																									
59	Feedrate M/TEC Calculations																								
60	Ash	mg/dscm																							

	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
1																								
2																								
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	B	AZ	BA	BB	BC	BD	BE	BF	BG	BH
1	Feedstream 1									
2										
3										
4	600C10	Cond Avg								
5										
6	Feedstream Number									
7	Feed Class									
8	Feed Class 2	HW								
9	Feedstream Description									
10	Feed Rate									
11	Heating Value									
12	Density									
13	Viscosity									
14	Ash									
15	Chlorine									
16										
17	Stack Gas Flowrate									
18	Oxygen									
19										
20	Thermal Feedrate									
21	Estimated Firing Rate									
22										
23	Feedrate MTEC Calculations									
24	Ash	1336.2								
25	Chlorine	48707412								
26										
27	600C11	Cond Avg	R1	R2	R3					Cond Avg
28										
29	Feedstream Number	F6								
30	Feed Class	Total								
31	Feed Class 2	HW								HW
32	Feedstream Description	Total								
33	Feed Rate	7411								
34	Heating Value									
35	Density									
36	Viscosity									
37	Ash									
38	Chlorine									
39	Antimony									
40	Arsenic									
41	Barium									
42	Beryllium									
43	Cadmium									
44	Chromium									
45	Lead									
46	Mercury									
47	Nickel									
48	Selenium									
49	Silver									
50	Thallium									
51	Zinc									
52										
53	Stack Gas Flowrate									
54	Oxygen									
55										
56	Thermal Feedrate	67.6								
57	Estimated Firing Rate	99.4								
58										
59	Feedrate MTEC Calculations	88.7	1.07	62.8	1.3	53.7	0.4	149.7	0.8	88.4
60	Ash									

	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	Chlorine				7350833	6060292	7835240	7082122	31845630	31111042	40965351	34640674	10212151	11565443	9698423											
62	Antimony	ug/dscrm	4.48	nd	4.59	nd	5.71	4.9	8.44	nd	8.15	nd	9.24	8.6	nd	3.69	nd	4.08	nd	3.26						
63	Arsenic	ug/dscrm	3.43	nd	3.57	nd	4.35	3.8	6.33	nd	6.11	nd	7.07	6.5	nd	2.64	nd	3.06	nd	2.50						
64	Barium	ug/dscrm	2.04		2.51		2.75	2.4	3.82		3.59		4.21	3.9		0.34		0.19		0.13						
65	Beryllium	ug/dscrm	0.61		0.63		0.76	0.7	1.10		1.00		1.21	1.1	nd	0.02	nd	0.03	nd	0.02						
66	Cadmium	ug/dscrm	1.16		1.28		1.23	1.2	2.58		2.60		2.54	2.6	nd	0.71	nd	0.79	nd	0.65						
67	Chromium	ug/dscrm	2.72		2.54		3.10	2.8	6.80		4.43		4.70	5.3	nd	1.05		1.75	nd	0.95						
68	Lead	ug/dscrm	15.56	nd	16.05	nd	19.84	17.1	29.01	nd	28.02	nd	32.61	29.9	nd	12.39	nd	13.76	nd	1.11						
69	Mercury	ug/dscrm	4.75	nd	4.84	nd	5.98	5.2	11.08	nd	10.70	nd	11.96	11.2	nd	9.76	nd	10.70	nd	8.70						
70	Nickel	ug/dscrm	10.28	nd	10.44	nd	13.05	11.3	18.72	nd	18.09	nd	20.66	19.2	nd	8.17	nd	9.17	nd	7.34						
71	Selenium	ug/dscrm	4.22	nd	4.33	nd	5.16	4.6	7.65	nd	7.39	nd	8.43	7.8	nd	3.43	nd	3.57	nd	2.99						
72	Silver	ug/dscrm	3.61		4.00		4.46	4.0	6.75		6.39		7.77	7.0	nd	0.40	nd	0.43	nd	0.35						
73	Thallium	ug/dscrm	11.60	nd	11.97	nd	14.68	12.8	21.10	nd	20.38	nd	23.37	21.6	nd	9.23	nd	10.19	nd	8.43						
74	Zinc	ug/dscrm	1.81		2.34		3.51	2.6	2.85		3.24		2.96	3.0		2.72		4.25		2.85						
75	SVM	ug/dscrm	16.7		17.3		21.1	18.4	31.6		30.6		35.1	32.5		13.11		14.55		1.77						
76	LVM	ug/dscrm	6.8		6.7		8.2	7.2	14.2		11.6		13.0	12.9		3.72		4.83		3.47						

US EPA ARCHIVE DOCUMENT

B	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	
61		10492006	nd	4789	nd	4742	10192	4986	978116	863939	227037	689697	0	50391520	0	49605457	0	58736244	0	0	0	0	0	0	0	0
62		3.7	nd	3.69	nd	3.57	nd	3.9						20.3	100	20.4	100	22.6	100	20.3	100	20.4	100	22.6	100	
63		2.7	nd	2.64	nd	2.80	nd	2.9						15.0	100	15.5	100	17.2	100	15.0	100	15.5	100	17.2	100	
64		0.2	nd	0.11	nd	0.10	nd	0.2						6.3	1.6	6.4	6.1	7.5	3.3	6.3	1.6	6.4	6.1	7.5	3.3	
65		0.0	nd	0.02	nd	0.02	nd	0.0						1.7	2.6	1.7	2.2	2.0	2.4	1.7	2.6	1.7	2.2	2.0	2.4	
66		0.7	nd	0.71	nd	0.71	nd	0.8						5.2	28	5.4	29	5.3	28	5.2	28	5.4	29	5.3	28	
67		1.3	nd	1.05	nd	1.04	nd	1.1						11.6	11	9.8	22	10.1	17	11.6	11	9.8	22	10.1	17	
68		9.1	nd	12.39	nd	12.23	nd	13.3						69.4	100	70.1	100	68.8	100	69.4	100	70.1	100	68.8	100	
69		9.7	nd	0.47	nd	0.48	nd	0.5						26.1	100	26.7	100	27.2	100	26.1	100	26.7	100	27.2	100	
70		8.2	nd	8.17	nd	8.15	nd	8.8						45.4	100	45.9	100	51.1	100	45.4	100	45.9	100	51.1	100	
71		3.3	nd	3.43	nd	3.31	nd	3.6						18.7	100	18.6	100	20.7	100	18.7	100	18.6	100	20.7	100	
72		0.4	nd	0.40	nd	0.38	nd	0.4						11.2	7.3	11.2	6.4	13.1	6.9	11.2	7.3	11.2	6.4	13.1	6.9	
73		9.3	nd	9.23	nd	9.17	nd	9.9						51.2	100	51.7	100	57.9	100	51.2	100	51.7	100	57.9	100	
74		3.3		3.19		14.11		8.9						10.6	0	23.9	0	18.8	0	10.6	0	23.9	0	18.8	0	
75		9.8		13.11		12.94		14.0						74.5	95	75.4	95	74.1	95	74.5	95	75.4	95	74.1	95	
76		4.0		3.71		3.87		4.1						28.4	62	27.0	67	29.2	63	28.4	62	27.0	67	29.2	63	

	B	AZ	BA	BB	BC	BD	BE	BF	BG	BH
61	Chlorine	52911073	0	50391520	0	49605457	0	58736244	0	52909485
62	Antimony	21.1	100	20.3	100	20.4	100	22.6	100	21.1
63	Arsenic	15.9	100	15.0	100	15.5	100	17.2	100	15.9
64	Barium	6.7	1.67	6.3	1.6	6.4	6.1	7.5	3.3	6.7
65	Beryllium	1.8	2.48	1.7	2.6	1.7	2.2	2.0	2.4	1.8
66	Cadmium	5.3	27.6	5.2	28	5.4	29	5.3	28	5.3
67	Chromium	10.5	18.1	11.6	11	9.8	22	10.1	17	10.5
68	Lead	69.4	100	69.4	100	70.1	100	68.8	100	69.4
69	Mercury	26.7	100	26.1	100	26.7	100	27.2	100	26.7
70	Nickel	47.4	100	45.4	100	45.9	100	51.1	100	47.4
71	Selenium	19.3	100	18.7	100	18.6	100	20.7	100	19.3
72	Silver	11.8	7.09	11.2	7.3	11.2	6.4	13.1	6.9	11.8
73	Thallium	53.6	100	51.2	100	51.7	100	57.9	100	53.6
74	Zinc	17.8	0	10.6	0	23.9	0	18.8	0	17.8
75	SVM	74.7	95	74.5	95	75.4	95	74.1	95	74.7
76	LVM	28.2	60.5	28.4	62	27.0	67	29.2	63	28.2

	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	AB	AC	AD	AE	
1	Feedstream 2																														
2																															
3																															
4	600C1																														
5	Feedstream Number																														
6	Feed Class																														
7	Feed Class 2																														
8	Feedstream Description																														
9	Feedrate																														
10	Heating value																														
11	Ash																														
12	Chlorine																														
13	Gas flowrate																														
14	Oxygen																														
15	Thermal Feedrate																														
16	Estimated Firing Rate																														
17	Feedrate MTEC																														
18	Chlorine																														
19																															
20																															
21																															
22																															
23																															
24																															
25																															
26	600C2																														
27	Feedstream Number																														
28	Feed Class																														
29	Feed Class 2																														
30	Feedstream Description																														
31	Feedrate																														
32	Heating value																														
33	Ash																														
34	Chlorine																														
35	Gas flowrate																														
36	Oxygen																														
37	Thermal Feedrate																														
38	Estimated Firing Rate																														
39	Feedrate MTEC																														
40	Chlorine																														
41																															
42																															
43	Thermal Feedrate																														
44	Estimated Firing Rate																														
45	Feedrate MTEC																														
46	600C3																														
47	Feedstream Number																														
48	Feed Class																														
49	Feed Class 2																														
50	Feedstream Description																														
51	Feedrate																														
52	Heating value																														
53	Ash																														

B	AF	AQ	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH					
1	Feedstream 2																																	
2																																		
3																																		
4	600C1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3				
5	Feedstream Number	F4	F4																															
6	Feed Class	Liq HW	Liq HW																															
7	Feed Class 2																																	
8	Feedstream Description	Waste water	Waste water	Solid dirt																														
9	Feedrate	994	1000																															
10	Heating value																																	
11	Ash																																	
12	Chlorine																																	
13	Gas flowrate																																	
14	Oxygen																																	
15	Thermal Feedrate																																	
16	Estimated Firing Rate																																	
17																																		
18	Thermal Feedrate																																	
19	Estimated Firing Rate																																	
20																																		
21	Feedrate MTEC																																	
22	Chlorine																																	
23																																		
24																																		
25																																		
26	600C2	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	
27	Feedstream Number	F4	F4																															
28	Feed Class	Liq HW	Liq HW																															
29	Feed Class 2																																	
30	Feedstream Description	E		Solid dirt																														
31	Feedrate	1003	998																															
32	Heating value																																	
33	Ash																																	
34	Chlorine																																	
35	Gas flowrate																																	
36	Oxygen																																	
37	Thermal Feedrate																																	
38	Estimated Firing Rate																																	
39																																		
40	Feedrate MTEC																																	
41	Chlorine																																	
42																																		
43	Thermal Feedrate																																	
44	Estimated Firing Rate																																	
45																																		
46	600C3	R1	R2	R3	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	R1	R2	R3	
47	Feedstream Number	F1	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	F2	
48	Feed Class	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	Solid non-HW	
49	Feed Class 2																																	
50	Feedstream Description																																	
51	Feedrate	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	8580	
52	Heating value																																	
53	Ash																																	

	B	C	D	E	F	G
1	Process Information					
2						
3	600C10			R1	R2	R3
4						
5	Combustion Chamber Temp (min)	°F		1443.32	1458.31	1467.4
6	AF Temperature (HRA)	°F		1641.72	1638.35	1634.49
7	Acid Scrubber Temperature	°F		128.3	128.6	129.32
8	ID Fan Blower Speed	rpm		654.24	654.1	654.22
9						
10	600C11			R1	R2	R3
11						
12	Combustion Chamber Temp (min)	°F		1914.0	1923	1902
13	AF Temperature (HRA)	°F		2142.00	2174	2101
14	Quench Water Flow	gpm		68.27	68.52	67.97
15	Quench Recir Flow	gpm		400.8	400.3	400.2
16	Acid Scrubber Recir Water Flow	gpm		666.0	662.3	662.1
17	Acid Scrubber Blowdown	gpm		70.45	68.3	67.13
18	Acid Scrubber Temperature	°F		134.6	134.3	133.4
19	Prescrubber Recir Flow	gpm		394.7	391.4	391.5
20	Prescrubber pH	pH		9	9.03	9.01
21	IWS-210A Recir Flow	gpm		547.5	546.9	547
22	IWS-210b Recir Flow	gpm		541.4	556.2	551.9
23	IWS-210C Recir Flow	gpm		445.90	444.4	443.6
24	P-210D Discharge Water Flow	gpm		484.6	484.9	485.8
25	IWS-210A/B pH	pH		7.97	7.93	7.95
26	IWS-210C pH	pH		8.34	8.15	8.16
27	IWS-210D pH	pH		5.5	6.44	6.4
28	IWS Outlet Temperature	°F		178.4	180.1	178.5
29	Gas Conditioner Exit Temperature	°F		175.9	177.4	175.8
30	Gas Conditioner Outlet Pressure	in H2O		0.2	0.79	0.73
31	Diff Pressure Across Gas Cond	in H2O		-0.06	-0.06	-0.06
32	Adsorption Bed Temperature	°F		175.2	176.6	174.9
33	Adsorption Bed Dust	in H2O		18.39	16.17	16.13
34	Adsorption Bed Exit Pressure	in H2O		20.15	18.1	18.08
35	ID Fan Blower Speed	rpm		570.7	567.4	566.2

	C	D	E	F	G
1	Process Information 2				
2					
3	600C1		R1	R2	R3
4					
5	Kiln Temperature	F	1412	1461	1432
6	Afterburner Temperature	F	1604	1613	1612
7	WS pH		7.6	7.8	7.8
8					
9	600C2		R1	R2	R3
10					
11	Combustion Temperature	F	1671	1679	1668
12	Combustion Temperature	F	1703	1704	1702
13	WS pH		6.8	7.7	7.6

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, Freeport Texas															
4	Condition ID:	600C11															
5	Condition/Test Date:	Risk burn, normal temp, normal feedrate															
6																	
7																	
8																	
9																	
10																	
11	Detected in sample volume (pg)																
12	2,3,7,8-TCDD	1	nd	4.52	4.52	2.26	2.26	nd	4.30	4.30	2.15	2.15	nd	3.35	3.35	1.68	1.68
13	Total TCDD	0	nd	8.95	0.00	4.48	4.48	0.00	5.99	0.00	5.99	0.00	nd	4.91	0.00	2.46	0.00
14	1,2,3,7,8-PCDD	0.5	nd	17.40	8.70	8.70	17.40	4.35	19.00	9.50	9.50	4.75	nd	8.76	4.38	4.38	2.19
15	Total PCDD	0	nd	93.90	0.00	46.95	46.95	0.00	87.40	0.00	87.40	0.00	nd	12.30	0.00	6.15	0.00
16	1,2,3,4,7,8-HxCDD	0.1		23.60	2.36	23.60	23.60	2.36	25.00	2.50	12.50	12.50	nd	14.20	1.42	7.10	0.71
17	1,2,3,6,7,8-HxCDD	0.1		29.30	2.93	29.30	29.30	2.93	32.00	3.20	16.00	16.00	nd	17.10	1.71	8.55	0.86
18	1,2,3,7,8,9-HxCDD	0.1		21.10	2.11	21.10	21.10	2.11	22.00	2.20	11.00	11.00	nd	12.50	1.25	6.25	0.63
19	Total HxCDD	0		281.00	0.00	281.00	281.00	0.00	218.00	0.00	218.00	0.00	nd	108.00	0.00	54.00	0.00
20	1,2,3,4,6,7,8-HpCDD	0.01		184.00	1.84	184.00	184.00	1.84	175.00	1.75	175.00	1.75	nd	114.00	1.14	114.00	1.14
21	Total HpCDD	0		368.00	0.00	368.00	368.00	0.00	294.00	0.00	294.00	0.00	nd	216.00	0.00	216.00	0.00
22	OCDD	0.001		551.00	0.55	551.00	551.00	0.55	612.00	0.61	612.00	0.61	nd	450.00	0.45	450.00	0.45
23	2,3,7,8-TCDF	0.1	nd	20.50	2.05	10.25	10.25	1.03	17.00	1.70	8.50	8.50	nd	7.98	0.80	3.99	0.40
24	Total TCDF	0		301.00	0.00	301.00	301.00	0.00	255.00	0.00	255.00	0.00	nd	91.90	0.00	45.95	0.00
25	1,2,3,7,8-PCDF	0.05		81.50	4.08	81.50	81.50	4.08	61.00	3.05	30.50	30.50	nd	27.90	1.40	13.95	0.70
26	Total PCDF	0.5		111.00	55.50	111.00	111.00	55.50	93.00	46.50	46.50	23.25	nd	44.30	22.15	22.15	11.08
27	1,2,3,4,7,8-HxCDF	0.1		691.00	69.10	691.00	691.00	69.10	576.00	57.60	576.00	57.60	nd	290.00	29.00	290.00	29.00
28	1,2,3,6,7,8-HxCDF	0.1		638.00	63.80	638.00	638.00	63.80	540.00	54.00	540.00	54.00	nd	269.00	26.90	269.00	26.90
29	2,3,4,6,7,8-HxCDF	0.1		190.00	19.00	190.00	190.00	19.00	150.00	15.00	150.00	15.00	nd	80.70	8.07	40.35	4.04
30	1,2,3,7,8,9-HxCDF	0.1		677.00	67.70	677.00	677.00	67.70	593.00	59.30	593.00	59.30	nd	308.00	30.80	308.00	30.80
31	Total HxCDF	0		5350.00	0.00	5350.00	5350.00	0.00	4290.00	0.00	4290.00	0.00	nd	2190.00	0.00	2190.00	0.00
32	1,2,3,4,6,7,8-HpCDF	0.01		6920.00	69.20	6920.00	6920.00	69.20	6350.00	63.50	6350.00	63.50	nd	3750.00	37.50	3750.00	37.50
33	1,2,3,4,7,8,9-HpCDF	0.01		1140.00	11.40	1140.00	1140.00	11.40	1150.00	11.50	1150.00	11.50	nd	748.00	7.48	748.00	7.48
34	Total HpCDF	0		11900.00	0.00	11900.00	11900.00	0.00	8370.00	0.00	8370.00	0.00	nd	6640.00	0.00	6640.00	0.00
35	OCDF	0.001		7570.00	7.57	7570.00	7570.00	7.57	8550.00	8.55	8550.00	8.55	nd	6160.00	6.16	6160.00	6.16
36																	
37	Gas sample volume (dscf)				132.096	132.096	132.096	132.096	132.096	132.096	132.096	132.096		132.096	132.096	132.096	132.096
38	O2 (%)				10	10	10	10	10	10	10	10		10	10	10	10
39																	
40	PCDD/PCDF (ng in sample)				0.392	27.522	27.522	0.385	0.345	0.345	23.576	0.308		0.184	0.184	16.159	0.162
41	PCDD/PCDF (ng/dscm @ 7% O2)				0.1336	9.3701	9.3701	0.1310	0.1174	0.1174	8.0267	0.1050	24.2	0.0626	0.0626	5.5013	0.0550
42																	
43	TEQ Cond Avg																
44	Total Cond Avg																