	B	C
1	**Source Description**	
2		
3	Phase I ID No.	805
4	EPA ID No.	MOD050226075
5	Facility Name	American Cyanamid
6	Facility Location	
7	City	Hannibal
8	State	MO
9	Unit ID Name/No.	TRANE/BRULE Unit D
10	Other Sister Facilities	None
11	Number of Sister Facilities	0
12	Combustor Class	Onsite incinerator
13	Combustor Type	Fixed hearth controlled air, liquid injection
14	Combustor Characteristics	Brule multi chamber unit, Trane liquid injection, to common APCS
15	Capacity (MMBtu/hr)	
16	Soot Blowing	
17	APCS Detailed Acronym	QT/QS/VS/ES/PBS
18	APCS General Class	WQ, HEWS, LEWS
19	APCS Characteristics	Quench, separator, venturi, entrainment separator, packed bed scrubber
20	Hazardous Wastes	Liq, solid
21	Haz Waste Description	organic and aqueous liquid wastes
22	Supplemental Fuel	Natural gas
23		
24	Stack Characteristics	
25	Diameter (ft)	3.5
26	Height (ft)	75.0
27	Gas Velocity (ft/sec)	12.9
28	Gas Temperature (°F)	189.3
29		
30	Permitting Status	
31	HWC Burn Status (Date if Terminated)	

	B	C
1	**Condition Description**	
2		
3	**805C1**	
4		
5	Report Name/Date	Test Report for Trial Burns on the Thimet/ Counter Incinerators at the American Cyanamid Facility in Hannibal, Missouri, Prepared by MRI, Project No. 9353-L(02), August 9, 1989
6	Report Prepare	MRI
7	Testing Firm	MRI
8	Cond Descr	Trial burn, ORGANICS SPIKED INTO SOLID/LIQUID WASTE
9	Testing Dates	May 5-11, 1989
10	Cond Dates	Aug-89
11		
12	**805C2**	
13		
14	Report Name/Date	Retest Trial Burn on the Thimet/Counter (Trane/Brule) Incinerators at the American Cyanamid Facility in Hannibal, Missouri, MRI Project No. 9353-L-03, September 20, 1989
15	Report Prepare	MRI
16	Testing Firm	MRI
17	Cond Descr	Trial burn retest, ORGANICS SPIKED INTO SOLID/LIQUID WASTE
18	Testing Dates	August 4-5, 1989
19	Cond Dates	Sep-89
20		
21	**805C3**	
22		
23	Report Name/Date	Dioxin/Furan Emission Test Results for Incinerators C, B, and D, MRI Project No. 4435, August 13, 1996
24	Report Prepare	MRI
25	Testing Firm	MRI
26	Cond Descr	DIOXIN/FURAN EMISSIONS TEST - AQUEOUS/ORGANIC WASTE
27	Testing Dates	March 28-29, 1996
28	Cond Dates	Aug-96

	B	C	D	E	F	G	H	I	J	K	L	M
1	**Stack Gas Emissions 2**											
2												
3												
4	**805C1**					R1		R2		R3		Cond Avg
5												
6	PM	E1	gr/dscf	y		0.0566		0.0577		0.0489		0.0544
7	CO (RA)	E1	ppmv	y		373.0		536.1		118.9		342.7
8	HC (RA)	E1	ppmv	y		13.8		3.1		4.4		7.1
9	HCl	E1	ppmv	y		8.3		11.4		10.2		9.96
10	Total Chlorine	E1	ppmv	y		8.3		11.4		10.2		10.0
11												
12	Sampling Train	PM/HCl	E1									
13	Stack Gas Flowrate		dscfm			10233.0		10013.0		11341.0		
14	O2		%			5.8		5.2		5.1		
15	Moisture		%			58.4		60.1		57.5		
16	Temperature		°F			185.0		187.0		185.0		
17												
18	Formic acid	E1	%			99.9346		99.984		99.9801		
19	Tetrachloroethylene	E1	%			99.99998		99.99999		99.998		
20												
21	**805C2**					R1		R2		R3		Cond Avg
22												
23	CO (RA)	E1	ppmv	y		399.7		312.8		274.4		329.0
24												
25	Sampling Train	VOC	E1									
26	Stack Gas Flowrate		dscfm			9530.0		10447.0		10386.0		
27	O2		%			5.4		3.4		4.4		
28	Moisture		%			64.5		60.5		60.9		
29	Temperature		°F			203.0		187.0		188.0		
30												
31	Chlorobenzene	E1	%			99.99935		99.99984		99.99986		
32												
33												
34	**805C3**					R1		R2		R3		Cond Avg
35												
36	CO (RA)	E1	ppmv	y		166.0		136.0		144.0		148.7
37	HC (RA)	E1	ppmv	y		2.0		1.4		1.4		1.6
38												
39	Sampling Train	D/F	E1									
40	Stack Gas Flowrate		dscfm			9408.0		7100.0		6699.0		
41	O2		%			5.0		5.2		4.8		
42	Moisture		%			60.3		62.0		61.3		
43	Temperature		°F			189.0		190.0		189.0		

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	**Feedstream 2**																					
2																						
3																						
4	**805C1**				R1		R2		R3		R1		R2		R3		R1		R2		R3	
5																						
6	Feedstream Number				F1		F1		F1		F2		F2		F2		F3		F3		F3	
7	Feed Class				NG		NG		NG		Liq HW		Liq HW		Liq HW		Liq HW		Liq HW		Liq HW	
8	Feed Class 2				MF		MF		MF													
9	Feedstream Description				Natural gas(scfm)		Natural gas(scfm)		Natural gas(scfm)		Aqueous organic		Aqueous organics		Aqueous organics		Liquid organics		Liquid organics		Liquid organics	
10	Feed Rate		lb/hr		396.5		376		400		16200		16260		16260		960		960		960	
11	Heating value		Btu/lb								222		207		124		16073		16179		16060	
12	Ash		wt %								14.66		14.7		14.39		0		0		0.006	
13	Chlorine		ppmw								120		200		140		117000		116000		116000	
14																						
15	Stack Gas Flowrate		dscfm		10233		10013		11341		10233		10013		11341		10233		10013		11341	
16	Oxygen		%		5.8		5.2		5.1		5.8		5.2		5.1		5.8		5.2		5.1	
17																						
18	Thermal Feedrate		MMBtu/hr								3.6		3.4		2.0		15.4		15.5		15.4	
19	Estimated Firing Rate		MMBtu/hr																			
20																						
21	**Feedrate MTEC Calculations**																					
22	Ash		mg/dscm								57154		56554		48571		0		0		1	
23	Chlorine		ug/dscm								46784		76944		47255		2703067		2634839		2311676	
24																						
25																						
26																						
27	**805C2**				R1		R2		R3		R1		R2		R3		R1		R2		R3	
28																						
29	Feedstream Number				F1		F1		F1		F2		F2		F2		F3		F3		F3	
30	Feed Class				NG		NG		NG		Liq HW		Liq HW		Liq HW		Liq HW		Liq HW		Liq HW	
31	Feed Class 2				MF		MF		MF													
32	Feedstream Description				Natural gas(scfm)		Natural gas(scfm)		Natural gas(scfm)		Aqueous organic		Aqueous organics		Aqueous organics		Liquid organics		Liquid organics		Liquid organics	
33	Ash		wt %																			
34	Chlorine		ppmw								14373		10780		10780		14310		16478		31222	
35	Feed Rate		lb/hr		490		496		495		16200		16200		16200		16		16		16	
36	Heating value		Btu/lb								2017		211		1112		17844		17832		17677	
37																						
38	Stack Gas Flowrate		dscfm		9530		10447		10386		9530		10447		10386		9530		10447		10386	
39	Oxygen		%		5.4		3.4		4.4		5.4		3.4		4.4		5.4		3.4		4.4	
40																						
41	Thermal Feedrate		MMBtu/hr								32.7		3.4		18.0		0.3		0.3		0.3	
42	Estimated Firing Rate		MMBtu/hr																			
43																						
44	**Feedrate MTEC Calculations**																					
45	Chlorine		ug/dscm								5862748		3555296		3791609		5765		5367		10846	

	B	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
1	**Feedstream 2**																									
2																										
3																										
4	**805C1**	R1		R2		R3		R1		R2		R3		R1		R2		R3		R1		R2		R3		Cond Avg
5																										
6	Feedstream Number	F4		F4		F4		F5		F5		F5								F6		F6		F6		F6
7	Feed Class	Solid HW		Solid HW		Solid HW		Solid HW		Solid HW		Solid HW								Total		Total		Total		Total
8	Feed Class 2													HW		HW		HW		Total		Total		Total		Total
9	Feedstream Descriptio	Solid organics		Solid organics		Solid organics		PVC		PVC		PVC								Total		Total		Total		Total
10	Feed Rate	198		198		198		19		19		19														
11	Heating value	0		0		0																				
12	Ash	0		0		0																				
13	Chlorine							487400		487400		487400														
14																										
15	Stack Gas Flowrate	10233		10013		11341		10233		10013		11341								10233		10013		11341		10529
16	Oxygen	5.8		5.2		5.1		5.8		5.2		5.1								5.8		5.2		5.1		5.37
17																										
18	Thermal Feedrate																									
19	Estimated Firing Rate																									52.3
20																										
21	**Feedrate MTEC Calcı**																									
22	Ash													57154		56554		48572		57154		56554		48572		54094
23	Chlorine							222863		219111		192237		2972714		2930894		2551168		2972714		2930894		2551168		2818259
24																										
25																										
26																										
27	**805C2**	R1		R2		R3		R1		R2		R3		R1		R2		R3		R1		R2		R3		Cond Avg
28																										
29	Feedstream Number	F4		F4		F4		F5		F5		F5								F6		F6		F6		F6
30	Feed Class	Solid HW		Solid HW		Solid HW		Solid HW		Solid HW		Solid HW								Total		Total		Total		Total
31	Feed Class 2													HW		HW		HW		Total		Total		Total		Total
32	Feedstream Descriptio	Solid organics		Solid organics		Solid organics		PVC		PVC		PVC								Total		Total		Total		Total
33	Ash																									
34	Chlorine	12629		12629		12629																				
35	Feed Rate	198		198		198																				
36	Heating value																									
37																										
38	Stack Gas Flowrate	9530		10447		10386		9530		10447		10386								9530		10447		10386		10121
39	Oxygen	5.4		3.4		4.4		5.4		3.4		4.4								5.4		3.4		4.4		4.40
40																										
41	Thermal Feedrate																									
42	Estimated Firing Rate																									53.3
43																										
44	**Feedrate MTEC Calcı**																									
45	Chlorine	62958		50905		54289														5931471		3611568		3856744		4466594

	C	D	E	F	G
1	**Process Information 2**				
2					
3	**805C1**		R1	R2	R3
4					
5	Fixed Hearth SCC Temperature	F		1515	1508
6	Fixed Hearth Temperature	F	1439	1419	1380
7	Trane Temperature	F	1600	1637	1599
8	WS Pressure Drop	in H2O	58.5	57.3	58
9	WS pH		5.94	5.74	6.05
10					
11	**805C2**		R1	R2	R3
12					
13	Fixed Hearth SCC Temperature	F	1560	1562	1562
14	Fixed Hearth Temperature	F	1423	1392	1424
15	Trane Temperature	F	1597	1603	1608
16	WS Pressure Drop	in H2O	53	58	58
17	WS pH		7.6	7.4	7.4

	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	**805C3**													
2					Run 1				Run 2				Run 3	
3	ng/dscm	I-TEF		Total	Total	TEQ		Total	Total	TEQ		Total	Total	TEQ
4		Wt Fact		Full ND	1/2 ND	1/2 ND		Full ND	1/2 ND	1/2 ND		Full ND	1/2 ND	1/2 ND
5	4D 2378	1	2	0.001	0.001	0.001	1	0.002	0.001	0.001	2	0.005	0.005	0.005
6	4D Other	0		0.000	0.000	0.000		0.004	0.004	0.000		0.001	0.001	0.000
7	4D Total	0	1	0.001	0.001	0.000		0.006	0.006	0.000		0.005	0.005	0.000
8	5D 12378	0.5	1	0.002	0.001	0.001	1	0.003	0.001	0.001	1	0.004	0.002	0.001
9	5D Other	0		0.001	0.001	0.000		0.000	0.000	0.000		0.000	0.000	0.000
10	5D Total	0		0.004	0.004	0.000	1	0.003	0.001	0.000	1	0.004	0.002	0.000
11	6D 123478	0.1	1	0.002	0.001	0.000	1	0.004	0.002	0.000	1	0.005	0.003	0.000
12	6D 123678	0.1	2	0.003	0.003	0.000	1	0.003	0.002	0.000	1	0.004	0.002	0.000
13	6D 123789	0.1	1	0.002	0.001	0.000	1	0.004	0.002	0.000	2	0.006	0.006	0.001
14	6D Other	0		0.001	0.001	0.000		-0.003	-0.003	0.000		0.008	0.008	0.000
15	6D Total	0		0.008	0.008	0.000		0.008	0.008	0.000		0.024	0.024	0.000
16	7D 1234678	0.01	2	0.012	0.012	0.000		0.019	0.019	0.000		0.017	0.017	0.000
17	7D Other	0		0.000	0.000	0.000		0.017	0.017	0.000		0.018	0.018	0.000
18	7D Total	0		0.012	0.012	0.000		0.035	0.035	0.000		0.034	0.034	0.000
19	8D	0.001		0.034	0.034	0.000		0.073	0.073	0.000		0.044	0.044	0.000
20	4F 2378	0.1	1	0.004	0.002	0.000	1	0.003	0.001	0.000	2	0.004	0.004	0.000
21	4F Other	0		0.012	0.012	0.000		0.013	0.013	0.000		0.012	0.012	0.000
22	4F Total	0		0.015	0.015	0.000		0.016	0.016	0.000		0.015	0.015	0.000
23	5F 12378	0.05		0.003	0.003	0.000	1	0.003	0.001	0.000	2	0.006	0.006	0.000
24	5F 23478	0.5		0.005	0.005	0.002	1	0.003	0.001	0.001		0.008	0.008	0.004
25	5F Other	0		0.028	0.028	0.000		0.021	0.021	0.000		0.018	0.018	0.000
26	5F Total	0		0.036	0.036	0.000		0.027	0.027	0.000		0.032	0.032	0.000
27	6F 123478	0.1	2	0.006	0.006	0.001		0.007	0.007	0.001		0.012	0.012	0.001
28	6F 123678	0.1		0.006	0.006	0.001	2	0.008	0.008	0.001		0.013	0.013	0.001
29	6F 123789	0.1	1	0.002	0.001	0.000	1	0.003	0.001	0.000	1	0.003	0.002	0.000
30	6F 234678	0.1		0.006	0.006	0.001		0.007	0.007	0.001		0.012	0.012	0.001
31	6F Other	0		0.016	0.016	0.000		0.019	0.019	0.000		0.051	0.051	0.000
32	6F Total	0		0.036	0.036	0.000		0.043	0.043	0.000		0.091	0.091	0.000
33	7F 1234678	0.01		0.026	0.026	0.000		0.026	0.026	0.000		0.045	0.045	0.000
34	7F 1234789	0.01		0.005	0.005	0.000	2	0.004	0.004	0.000		0.009	0.009	0.000
35	7F Other	0		0.008	0.008	0.000		0.016	0.016	0.000		0.018	0.018	0.000
36	7F Total	0		0.039	0.039	0.000		0.046	0.046	0.000		0.073	0.073	0.000
37	8F	0.001		0.016	0.016	0.000		0.020	0.020	0.000		0.032	0.032	0.000
38	Total PCDD/PCDF			0.202	0.202			0.276	0.275			0.355	0.353	
39	TEQ		23.6	0.009		0.008	70.4	0.009		0.006	18.5	0.018		0.016