

US EPA ARCHIVE DOCUMENT

	B	C
1	<b>Source Description</b>	
2		
3	Phase II ID No.	812
4	EPA ID No.	LAD008213191
5	Facility Name	Rubicon, Inc
6	Facility Location	
7	City	Geismar
8	State	LA
9	Unit ID Name/No.	TDI boiler
10	Other Sister Facilities	None
11	Number of Sister Facilities	0
12	Combustor Class	Liquid-fired boiler
13	Combustor Type	Liquid-fired
14	Combustor Characteristics	Turbulent burner chamber, closed coupled to a watertube waste heat boiler, 30 MMBtu/hr, installed 1985, 25,000 lb/hr steam @ 215 psig.
15	Capacity (MMBtu/hr)	30
16	Soot Blowing	
17	APCS Detailed Acronym	Q/WS
18	APCS General Class	WQ, LEWS
19	APCS Characteristics	
20	Hazardous Wastes	Liq
21	Haz Waste Description	TDI LUWA Bottoms, ODCB flush, waste vacuum pump oil
22	Supplemental Fuel	Natural gas
23		
24	Stack Characteristics	
25	Diameter (ft)	3.9
26	Height (ft)	100
27	Gas Velocity (ft/sec)	15.8
28	Gas Temperature (°F)	150
29		
30	Permitting Status	Tier I adjusted except Cr+6 and HCl/Cl2
31	HWC Burn Status (Date if Terminated)	

	B	C
1	<b>Cond Description</b>	
2		
3	<b>812C1</b>	
4		
5	Report Name/Date	Risk Assessment Trial Burn Report, Dec. 29, 1997
6	Report Prepare	Focus Environmental Inc.
7	Testing Firm	Focus Environmental Inc.
8	Testing Dates	July 21-22, 1997
9	Cond Dates	Jul-97
10	Cond. Description	Trial burn; min comb temp
11	Content	ODCB DRE, CO
12		
13	<b>812C2</b>	
14		
15	Report Name/Date	Risk Assessment Trial Burn Report, Dec. 29, 1997
16	Report Prepare	Focus Environmental Inc.
17	Testing Firm	Focus Environmental Inc.
18	Testing Dates	July 22-24, 1997
19	Cond Dates	Jul-97
20	Cond. Description	Trial burn, risk burn; max feed rate
21	Content	PM, HCl/Cl <sub>2</sub> , CO, metals
22		
23	<b>812C3</b>	
24		
25	Report Name/Date	Risk Assessment Trial Burn Report, Dec. 29, 1997
26	Report Prepare	Focus Environmental Inc.
27	Testing Firm	Focus Environmental Inc.
28	Testing Dates	July 22-24, 1997
29	Cond Dates	Jul-97
30	Cond. Description	Risk burn; max organic liquid feed
31	Content	Organics, PSD

	B	C	D	E	F	G	H	I	J	K	L	M	N
1	<b>Stack Gas Emissions</b>												
2													
3		Comments	Units	7% O2									
4													
5	<b>812C1</b>					R1		R2		R3		Cond Avg	
6													
7	CO (MHRA)	E1	ppmv	y		2.5		2.1		5.9		3.5	
8	CO (RA)	E1	ppmv	y		1.5		1.3		2.1		1.6	
9													
10	Sampling Train	Organic Dest E1											
11	Stack Gas Flowrate		dscfm			7615		7366		7329		7437	
12	O2		%			12.2		11.9		12.4		12.2	
13	Moisture		%			22.9		23.5		22.9		23.1	
14	Temperature		°F			147		148		147		147.3	
15													
16	POHC DRE	Orthodichlorobenzene											
17	Feedrate		lb/hr			33.75		33.25		27.4			
18	Emission Rate	E1	lb/hr		nd	0.0000014	nd	0.0000013	nd	0.0000014			
19	DRE	E1	%		>	99.999996	>	99.999996	>	99.999995			
20													
21													
22	<b>812C2</b>					R1		R2		R3		Cond Avg	
23													
24	PM	E2	gr/dscf	y		0.0028		0.0022		0.0026		0.0025	
25	CO (MHRA)	E2	ppmv	y		4.24		3.73		1.93		3.3	
26	CO (RA)	E2	ppmv	y		2.15		2.44		1.65		2.1	
27	HCl		mg/dscm	n		1.9		4.84		4.87			
28	Cl2		mg/dscm	n		0.2		0.6		0.6			
29	Chromium (Hex)		µg/dscm	n		16.5		15.9		13.1			
30	Antimony		µg/dscm	n	nd	18.4		7.2	nd	10.4			
31	Arsenic		µg/dscm	n	nd	5.8	nd	5.5	nd	9.3			
32	Barium		µg/dscm	n		54.0		57.0	nd	37.1			
33	Beryllium		µg/dscm	n	nd	0.1	nd	0.3	nd	0.3			
34	Cadmium		µg/dscm	n	nd	0.2	nd	0.2	nd	0.2			
35	Chromium		µg/dscm	n	nd	73.5		69.5	nd	68.4			
36	Lead		µg/dscm	n		12.2	nd	7.5	nd	10.5			
37	Mercury		µg/dscm	n	nd	3.1	nd	1.4	nd	4.2			
38	Nickel		µg/dscm	n	nd	380.0	nd	299.0	nd	287.0			
39	Selenium		µg/dscm	n	nd	4.7	nd	4.5	nd	4.7			
40	Silver		µg/dscm	n	nd	0.6	nd	0.6	nd	7.7			
41	Thallium		µg/dscm	n	nd	14.5	nd	13.8	nd	14.2			
42													
43	Sampling Train	Metals	E1										
44	Stack Gas Flowrate		dscfm			7089		7424		7214		7242	
45	O2		%			8.0		8.0		8.0		8.0	
46	Moisture		%			24.69		25.83		25.3		25.27	
47	Temperature		°F			151		151		151		151	
48													
49	Sampling Train	PM, HCl/Cl2	E2										
50	Stack Gas Flowrate		dscfm			7385		7459		7348		7397	
51	O2		%			8		8		8		8.00	
52	Moisture		%			24.41		24.95		24.14		24.50	
53	Temperature		°F			155		154		153		154	
54													
55	Sampling Train	Cr(+6)	E3										
56	Stack Gas Flowrate		dscfm			7187		7042		6741		6990	
57	O2		%			8		8		8		8	
58	Moisture		%			30.2		29.6		27		29	
59	Temperature		°F			151		152		152		152	
60													
61	HCl	E2	ppmv	y		1.4		3.5		3.5		2.8	
62	Cl2	E2	ppmv	y		0.1		0.2		0.2		0.2	
63	Total Chlorine	E2	ppmv	y		1.5		3.9		4.0		3.1	
64	Chromium (Hex)	E3	µg/dscm	y		17.8		17.1		14.1		16.3	
65	Antimony	E1	µg/dscm	y	nd	39.6		7.8	nd	22.4		23.3	
66	Arsenic	E1	µg/dscm	y	nd	12.5	nd	11.9	nd	20.1		14.8	
67	Barium	E1	µg/dscm	y		58.2		61.4	nd	79.9		66.5	
68	Beryllium	E1	µg/dscm	y	nd	0.3	nd	0.7	nd	0.7		0.6	
69	Cadmium	E1	µg/dscm	y	nd	0.5	nd	0.5	nd	0.5		0.5	
70	Chromium	E1	µg/dscm	y	nd	158.3		74.8	nd	147.3		126.8 high non detects?	
71	Lead	E1	µg/dscm	y		13.1	nd	16.0	nd	22.6		17.3	

	B	C	D	E	F	G	H	I	J	K	L	M	N
72	Mercury	E1	µg/dscm	y	nd	6.8	nd	3.0	nd	9.1		6.3	
73	Nickel	E1	µg/dscm	y	nd	818.5	nd	644.0	nd	618.2		693.5	
74	Selenium	E1	µg/dscm	y	nd	10.2	nd	9.7	nd	10.0		10.0	
75	Silver	E1	µg/dscm	y	nd	1.4	nd	1.3		8.2		3.6	
76	Thallium	E1	µg/dscm	y	nd	31.2	nd	29.7	nd	30.6		30.5	
77													
78	SVM	E1	µg/dscm	y		13.7		16.5		23.1		17.8	
79	LVM	E1	µg/dscm	y		171.1		87.5		168.1		142.2	
80													
81	<b>812C3</b>					R1		R2		R3		Cond Avg	
82													
83	CO (MHRA)	E1	ppmv	y		4.8		44.0		2.1		16.9	
84	CO (RA)	E1	ppmv	y		1.4		4.5		1.1		2.3	
85													
86	Sampling Train	PCDD/PCDF	E1										
87	Stack Gas Flowrate		dscfm			7112		7021		7055		7062.7	
88	O2		%			7.8		8		7.4		7.7	
89	Moisture		%			25.25		25.31		25.72		25.4	
90	Temperature		°F			154		154		157		155.0	

B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1	<b>Feedstreams</b>																						
2																							
3																							
4	<b>812C1</b>																						
5	Feedstream Number																						
6	Feed Class																						
7	Feed Class 2																						
8	Feedstream Description																						
9	Feed Rate	lb/hr																					
10	Feed Rate	scfm																					
11	Thermal Feedrate	MMBtu/hr																					
12	Estimated Firing Rate	MMBtu/hr																					
13	Stack Gas Flowrate	dscfm																					
14	Oxygen	%																					
15																							
16																							
17																							
18																							
19																							
20	<b>812C2</b>																						
21	Feedstream Number																						
22	Feed Class																						
23	Feed Class 2																						
24	Feedstream Description																						
25	Feed Rate	lb/hr																					
26	Feed Rate	scfm																					
27	Thermal Feedrate	MMBtu/hr																					
28	Estimated Firing Rate	MMBtu/hr																					
29	Ash	lb/hr																					
30	Chlorine	lb/hr																					
31	Antimony	lb/hr																					
32	Arsenic	lb/hr																					
33	Barium	lb/hr																					
34	Beryllium	lb/hr																					
35	Cadmium	lb/hr																					
36	Chromium	lb/hr																					
37	Lead	lb/hr																					
38	Mercury	lb/hr																					
39	Nickel	lb/hr																					
40	Selenium	lb/hr																					
41	Silver	lb/hr																					
42	Thallium	lb/hr																					
43	Stack Gas Flowrate	dscfm																					
44	Oxygen	%																					
45																							
46																							
47																							
48	<b>Feedrate MTEC Calculations</b>																						
49	Ash	mg/dscm																					
50	Chlorine	ug/dscm																					
51	Antimony	ug/dscm																					
52	Arsenic	ug/dscm																					
53	Barium	ug/dscm																					
54	Beryllium	ug/dscm																					
55	Cadmium	ug/dscm																					
56	Chromium	ug/dscm																					
57	Lead	ug/dscm																					
58	Mercury	ug/dscm																					
59	Nickel	ug/dscm																					
60	Selenium	ug/dscm																					
61	Silver	ug/dscm																					

	B	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ
1	Feedstreams											
2												
3												
4	812C1	R3		Cond Avg								
5												
6	Feedstream Number	F3		F3								
7	Feed Class	Total		Total								
8	Feed Class 2	Total		Total								
9	Feedstream Description											
10	Feed Rate											
11	Feed Rate											
12	Thermal Feedrate	21.71		21.5								
13	Estimated Firing Rate			20.9								
14												
15	Stack Gas Flowrate			7437								
16	Oxygen			12.2								
17												
18												
19												
20	812C2	R3		Cond Avg								
21												
22	Feedstream Number	F3		F3								
23	Feed Class	NG		NG								
24	Feed Class 2	MF		MF								
25	Feedstream Description	Nat gas		Nat gas								
26	Feed Rate											
27	Feed Rate											
28	Thermal Feedrate	9		3								
29	Estimated Firing Rate											
30	Ash											
31	Chlorine											
32	Antimony											
33	Arsenic											
34	Barium											
35	Beryllium											
36	Cadmium											
37	Chromium											
38	Lead											
39	Mercury											
40	Nickel											
41	Selenium											
42	Silver											
43	Thallium											
44												
45	Stack Gas Flowrate											
46	Oxygen											
47												
48	Feedrate MTEC Calculation											
49	Ash	100		5.0	100			5.3	100			10.4
50	Chlorine	0		12047885.5	0			10538647.8	0			11020339.3
51	Antimony	100		25.0	100			26.4	100			52.0
52	Arsenic	100		12.4	100			13.2	100			25.9
53	Barium	100		25.0	100			26.4	100			52.0
54	Beryllium	100		12.4	100			13.2	100			25.9
55	Cadmium	100		12.4	100			13.2	100			25.9
56	Chromium	0		801.6	0			763.6	0			791.5
57	Lead	100		25.0	100			26.4	100			52.0
58	Mercury	100		9.9	100			10.6	100			20.8
59	Nickel	100		1177.5	100			1482.4	100			1351.6
60	Selenium	100		23.8	100			26.3	100			51.0
61	Silver	100		12.4	100			13.2	100			25.9

B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
62	Thallium	ug/dscm	100		49.9	100		52.9	100		53.3	100											
63																							
64	SVM	ug/dscm	100		74.8	100		79.3	100		79.9	100											
65	LVM	ug/dscm	19		258.7	20		264.4	21		254.9	20			552.0	607.4		584.0					
66																							
67																							
68																							
69	<b>812C3</b>																						
70																							
71	Feedstream Number																						
72	Feed Class																						
73	Feed Class 2																						
74	Feedstream Description																						
75	Feed Rate	lb/hr																					
76	Feed Rate	scfm																					
77	Thermal Feedrate	MMBtu/hr																					
78	Estimated Firing Rate	MMBtu/hr																					
79																							
80	Stack Gas Flowrate	dscfm																					
81	O2	%																					



	B	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ
62	Thallium				100	25.0	100	26.4	100	26.6	100	52.0
63												
64	SVM			50	50	74.8	50	79.3	50	79.9	100	78.0
65	LVM			3	3	851.4	3	816.4	3	862.3	6	843.4
66												
67												
68												
69	<b>812C3</b>	R3		Cond Avg								
70												
71	Feedstream Number	F3										
72	Feed Class	Total		F3								
73	Feed Class 2	Total		Total								
74	Feedstream Description	Total		Total								
75	Feed Rate											
76	Feed Rate											
77	Thermal Feedrate			30.3								
78	Estimated Firing Rate			29.7								
79												
80	Stack Gas Flowrate			7062.7								
81	O2			7.73								

	A	B	C	D	E	F
1	<b>Process Information</b>					
2						
3		Units	1	2	3	Avg
4						
5	<b>812C1</b>					
6						
7	Combustion Temp	°F	1905	1897	1902	1901
8	Wet Scrubber Operation					
9	Scrubber L/G Ratio	lb/lb	2.1	2.1	2.0	2.1
10	Scrubber pH		8.7	9.4	9.2	9.1
11	Scrubber Blowdown	gpm	3.4	3.4	3.4	3.4
12						
13	<b>812C2</b>					
14						
15	Combustion Temp	°F	2484	2537	2520	2514
16	Wet Scrubber Operation					
17	Scrubber L/G Ratio	lb/lb	2.1	2.1	2.0	2.1
18	Scrubber pH		8.6	8.2	8.3	8.4
19	Scrubber Blowdown	gpm	3.4	3.1	3.2	3.2
20						
21	<b>812C3</b>					
22						
23	Combustion Temp	°F	2552	2517	2539	2536
24	Wet Scrubber Operation					
25	Scrubber L/G Ratio	lb/lb	2.1	2.1	2.1	2.1
26	Scrubber pH		8.6	8.1	8.3	8.3
27	Scrubber Blowdown	gpm	3.4	3.4	3.2	3.3

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:	Rubicon (LA), TDI Boiler															
4	Condition ID:	812C3															
5	Condition/Test Date:	Risk burn, July 22-23, 1997															
6																	
7																	
8																	
9																	
10	Stack Gas Conc (ng/dscm)																
11	2,3,7,8-TCDD	1	nd	0.0062	0.00618	0.0031	0.0031	0.0031	0.0114	0.0114	0.0114	0.0114	nd	0.0208	0.0208	0.0104	0.0104
12	TCDD Other	0							0.0474	0.0237	0.0474	0.0237	nd	0.0904	0.0452	0.0452	0.0226
13	1,2,3,7,8-PCDD	0.5	nd	0.0371	0.01856	0.0186	0.0093		0.0538	0.00538	0.0538	0.0054	nd	0.1026	0.01026	0.0513	0.0051
14	PCDD Other	0							0.1040	0.0104	0.1040	0.0104	nd	0.1780	0.0178	0.0890	0.0089
15	1,2,3,4,7,8-HxCDD	0.1	nd	0.0432	0.00432	0.0216	0.0022		0.0696	0.00696	0.0696	0.0070	nd	0.1402	0.01402	0.0701	0.0070
16	1,2,3,6,7,8-HxCDD	0.1	nd	0.0804	0.00804	0.0402	0.0040		0.3350	0.00335	0.3350	0.0034	nd	0.3370	0.00337	0.3370	0.0034
17	1,2,3,7,8,9-HxCDD	0.1	nd	0.0680	0.0068	0.0340	0.0034		0.5760	0.00576	0.5760	0.0006	nd	0.5450	0.000545	0.5450	0.0005
18	HxCDD Other	0							0.0980	0.0098	0.0980	0.0098	nd	0.0913	0.00913	0.0913	0.0091
19	1,2,3,4,6,7,8-HpCDD	0.01	nd	0.1890	0.00189	0.1890	0.0019		0.2340	0.0117	0.2340	0.0117	nd	0.4440	0.0222	0.2220	0.0111
20	HpCDD Other	0							0.1296	0.0648	0.1296	0.0648	nd	0.2032	0.1016	0.1016	0.0508
21	OCDD	0.001		0.4640	0.000464	0.4640	0.0005		0.7870	0.0787	0.7870	0.0787	nd	0.6710	0.0671	0.6710	0.0671
22	2,3,7,8-TCDF	0.1	nd	0.0309	0.00309	0.0309	0.0031		0.3420	0.0342	0.3420	0.0342	nd	0.2550	0.0255	0.2550	0.0255
23	TCDF Other	0							0.1770	0.0177	0.1770	0.0177	nd	0.1070	0.0107	0.1070	0.0107
24	1,2,3,7,8-PCDF	0.05	nd	0.1268	0.00634	0.0634	0.0032		0.0474	0.00474	0.0474	0.0047	nd	0.0772	0.00772	0.0386	0.0039
25	2,3,4,7,8-PCDF	0.5	nd	0.1640	0.082	0.0820	0.0410		0.0000	0	0.0000	0.0000	nd	0.0000	0	0.0000	0.0000
26	PCDF Other	0							0.6550	0.00655	0.6550	0.0066	nd	0.3280	0.00328	0.3280	0.0033
27	1,2,3,4,7,8-HxCDF	0.1	nd	0.8720	0.0872	0.4360	0.0436		2.7200	0.00272	2.7200	0.0027	nd	1.6200	0.00162	1.6200	0.0016
28	1,2,3,6,7,8-HxCDF	0.1	nd	0.4980	0.0498	0.2490	0.0249		3.16	3.16	3.16	3.16	nd	3.18	3.18	3.18	3.18
29	2,3,4,6,7,8-HxCDF	0.1	nd	0.3520	0.0352	0.1760	0.0176		8.00	8.00	8.00	8.00	nd	7.40	7.40	7.40	7.40
30	1,2,3,7,8,9-HxCDF	0.1	nd	0.1052	0.01052	0.0526	0.0053		0.92	0.92	0.92	0.92	nd	1.15	1.15	1.15	1.15
31	HxCDF Other	0							0.32	0.32	0.32	0.32	nd	0.37	0.37	0.37	0.37
32	1,2,3,4,6,7,8-HpCDF	0.01	nd	1.6800	0.0168	1.6800	0.0168		0.20	0.20	0.20	0.20	nd	0.00	0.00	0.00	0.00
33	1,2,3,4,7,8,9-HpCDF	0.01	nd	1.6760	0.01676	0.8380	0.0084		92.9	92.9	92.9	92.9	nd	0.00	0.00	0.00	0.00
34	HpCDF Other	0							0.38	0.38	0.38	0.38	nd	0.00	0.00	0.00	0.00
35	OCDF	0.001		2.9400	0.00294	2.9400	0.0029		0.26	0.26	0.26	0.26	nd	0.00	0.00	0.00	0.00
37	Gas sample volume (dscm)				3.23		3.23										
38	O2 (%)				7.80		7.80										
39																	
40	PCDD/PCDF (ng in sample)				1.15		0.62										
41	PCDD/PCDF (ng/dscm @ 7% O2)				0.38		0.20										
42																	
43	TEQ Cond Avg (ng/dscm)				0.26		0.20										