Source Description

Phase I ID No.	221
EPA ID No.	TXD055141378
Facility Name	ROLLINS ENVIRONMENTAL SERVICES
Facility Location	
City	DEER PARK
State	TX
Unit ID Name/No.	RES (TX) INCINERATOR TRAIN II
Other Sister Facilities	Old kiln arrangement, Train I not included in testing
Combustor Class	COMMERCIAL INCINERATOR
Combustor Type	Rotary kiln
Combustor Characteristics	Old kiln arrangement, Train I not included in testing. ID No. 609 is current full system
Capacity (MMBtu/hr)	
Soot Blowing	
APCS	SS/PT/VS
APCS Characteristics	Spray saturator, packed bed, venturi scrubber
Hazardous Wastes	HW SLD/LIQ/SLUDGE
Haz Waste Description	
Supplemental Fuel	NONE
Stack Characteristics	
Diameter (ft)	
Height (ft)	
Gas Velocity (ft/sec)	
Gas Temperature (°F)	
Permitting Status	
HWC Burn Status (Date if Terminated)	

Condition Description

221C1

Report Name/Date	RES(TX) Trial Burn Program Incinerator Train II Emission Test Results, Rollins Environmental Services, Deer Park, Texas, Prepared by Alliance Technologies, Project # 5-888-999, August 1998
Report Prepare	Alliance Technologies
Testing Firm	Alliance Technologies
Cond Descr	?
Test Dates	
Cond Date	08/01/88

221C2

Report Name/Date	RES(TX) Trial Burn Program Incinerator Train II Emission Test Results, Rollins Environmental Services, Deer Park, Texas, Prepared by Alliance Technologies, Project # 5-888-999, August 1998
Report Prepare	Alliance Technologies
Testing Firm	Alliance Technologies
Cond Descr	?
Test Dates	
Cond Date	08/01/88

221C3

Report Name/Date	RES(TX) Trial Burn Program Incinerator Train II Emission Test Results, Rollins Environmental Services, Deer Park, Texas, Prepared by Alliance Technologies, Project # 5-888-999, August 1998
Report Prepare	Alliance Technologies
Testing Firm	Alliance Technologies
Cond Descr	?
Test Dates	
Cond Date	08/01/88

221C4

Report Name/Date	RES(TX) Trial Burn Program Incinerator Train II Emission Test Results, Rollins Environmental Services, Deer Park, Texas, Prepared by Alliance Technologies, Project # 5-888-999, August 1998
Report Prepare	Alliance Technologies
Testing Firm	Alliance Technologies
Cond Descr	?
Test Dates	
Cond Date	08/01/88

221C5

Report Name/Date	RES(TX) Trial Burn Program Incinerator Train II Emission Test Results, Rollins Environmental Services, Deer Park, Texas, Prepared by Alliance Technologies, Project # 5-888-999, August 1998
Report Prepare	Alliance Technologies
Testing Firm	Alliance Technologies
Cond Descr	?
Test Dates	
Cond Date	08/01/88

Stack Gas Emissions 2

221C1					R1		R2		R3	Cond Avg
PM		gr/dscf	y		0.0116		0.0150		0.0160	0.0142
CO		ppmv	y		8.0		7.9		11.3	
HC		ppmv	y		3.2		4.8		3.2	
HCl		ppmv	y	nd	3.4	nd	2.9	nd	4.0	1.72
Cl2		ppmv	y		2.7		4.7		4.9	4.13
Total Cl		ppmv	y		7.2		10.9		11.9	10.0
Carbon Tetrachloride	DRE	%								99.99996
Arsenic		ug/dscm	y	nd	2.5	nd	2.7	nd	2.5	
Beryllium		ug/dscm	y	nd	0.1	nd	0.1	nd	0.1	
Cadmium		ug/dscm	y		6.5		10.6		5.7	
Chromium		ug/dscm	y		68.6		32.1		32.7	
Copper		ug/dscm	y		158.8		358.7		263.4	
Iron		ug/dscm	y		427.7		347.4		525.5	
Lead		ug/dscm	y		74.2		113.1		98.7	
Mercury		ug/dscm	y		6.7		5.4		1.7	4.6
Nickel		ug/dscm	y		158.2		98.5		132.6	
Vanadium		ug/dscm	y	nd	3.1	nd	3.3	nd	3.1	
Zinc		ug/dscm	y		516.7		430.6		279.4	
SVM		ug/dscm	y		80.7		123.7		104.4	102.9
LVM		ug/dscm	y		69.9		33.5		34.0	45.8
Sampling Train	Metals									
Moisture					4.1		4.4		4.7	
Oxygen					11.5		12.5		12.8	
Stack gas flowrate					39839.0		41252.0		47173.0	
Temperature					122.6		119.0		121.2	

221C2					R1		R2		R3	Cond Avg
PM		gr/dscf	y		0.0126		0.0138		0.0177	0.015
CO		ppmv	y		16.5		17.0		18.9	
HC		ppmv	y		4.6		4.7		3.3	
HCl		ppmv	y	nd	3.1	nd	2.7	nd	2.5	1.376
Cl2		ppmv	y		3.4		4.2		3.5	3.677
Total Cl		ppmv	y		8.3		9.7		8.2	8.730
Arsenic		ug/dscm	y	nd	2.4	nd	2.3	nd	2.2	
Beryllium		ug/dscm	y	nd	0.1	nd	0.1	nd	0.1	
Cadmium		ug/dscm	y		2.1		1.7		1.9	
Chromium		ug/dscm	y		24.3		10.6		5.2	
Copper		ug/dscm	y		31.8		111.7		72.3	
Iron		ug/dscm	y		553.7		267.3		101.4	
Lead		ug/dscm	y		10.1	nd	1.7		21.9	
Mercury		ug/dscm	y		49.1		11.9		20.7	27.2
Nickel		ug/dscm	y		459.2		1555.3		1379.7	

Vanadium		ug/dscm	y	nd	3.0	nd	2.9	nd	2.7		
Zinc		ug/dscm	y		126.0		173.6		152.3		
SVM		ug/dscm	y		12.2		2.6		23.8		12.9
LVM		ug/dscm	y		25.5		11.9		6.3		14.6
Carbon Tetrachloride	DRE	%									99.99994
Sampling Train	Metals										
Moisture					3.9		4.0		4.5		
Oxygen					12.1		11.8		11.6		
Stack gas flowrate					44845.0		43896.0		46375.0		
Temperature					130.0		123.1		118.6		

221C3					R1		R2		R3		Cond Avg
PM		gr/dscf	y		0.0167		0.0194		0.0032		0.0131
CO		ppmv	y		19.6		20.0		19.6		
HC		ppmv	y		3.8		3.6		2.5		
HCl		ppmv	y	nd	3.5		2.7		23.4		9.87
Cl2		ppmv	y		3.2		3.2		2.1		2.86
Total Cl		ppmv	y		8.3		9.2		27.6		15.01
Arsenic		ug/dscm	y		11.9		9.7	nd	1.8		
Beryllium		ug/dscm	y	nd	0.1	nd	0.1	nd	0.1		
Cadmium		ug/dscm	y		4.9		3.3		1.0		
Chromium		ug/dscm	y		20.1		21.3		5.3		
Copper		ug/dscm	y		115.2		86.5		20.2		
Iron		ug/dscm	y		585.1		747.5		156.3		
Lead		ug/dscm	y		24.7		27.0		7.5		
Mercury		ug/dscm	y		0.16		0.13		0.04		0.11
Nickel		ug/dscm	y		2052.2		249.7		35.8		
Vanadium		ug/dscm	y	nd	2.1	nd	2.1	nd	2.2		
Zinc		ug/dscm	y		251.4		201.6		54.8		
SVM		ug/dscm	y		29.6		30.3		8.5		22.83
LVM		ug/dscm	y		32.1		31.1		6.2		23.11
Carbon Tetrachloride	DRE	%									99.99994
Sampling Train	Metals										
Moisture					4.9		5.6		3.4		
Oxygen					8.4		8.2		8.7		
Stack gas flowrate					45282.0		44001.0		43523.0		
Temperature					113.6		124.5		130.9		

221C4					R1		R2		R3		Cond Avg
PM		gr/dscf	y		0.0205		0.0133		0.0105		0.0147
CO		ppmv	y		15.6		14.1		14.1		
HC		ppmv	y		3.3		3.1		2.6		

HCl		ppmv	y		22.0		13.9		17.4	17.8
Cl2		ppmv	y		9.6		6.1		9.9	8.6
Total Cl		ppmv	y		41.2		26.2		37.3	34.9
Arsenic		ug/dscm	y	nd	1.7	nd	1.6	nd	1.6	
Beryllium		ug/dscm	y	nd	0.1	nd	0.1	nd	0.1	
Cadmium		ug/dscm	y		1.3		3.0		2.2	
Chromium		ug/dscm	y		39.0		325.4		49.1	
Copper		ug/dscm	y		85.0		61.5		40.1	
Iron		ug/dscm	y		788.8		2774.7		1351.6	
Lead		ug/dscm	y		70.5		32.1		19.2	
Mercury		ug/dscm	y		33.7		6.0		13.7	17.8
Nickel		ug/dscm	y		148.0		439.7		218.2	
Vanadium		ug/dscm	y	nd	2.1	nd	2.0	nd	2.0	
Zinc		ug/dscm	y		899.5		386.1		408.9	
SVM		ug/dscm	y		71.8		35.1		21.4	42.8
LVM		ug/dscm	y		39.9		326.2		50.0	138.7
Carbon Tetrachloride	DRE	%								99.99992
Sampling Train	Metals									
Moisture					4.6		4.3		4.0	
Oxygen					8.2		7.5		8.2	
Stack gas flowrate					44614.0		44222.0		45711.0	
Temperature					120.2		115.5		118.5	

221C5					R1		R2		R3	Cond Avg
PM		gr/dscf	y		0.0124		0.0131		0.0122	0.0125
CO		ppmv	y		18.3		17.9		16.9	
HC		ppmv	y		3.0		3.6		3.2	
HCl		ppmv	y		65.5		196.8		110.1	124.1
Cl2		ppmv	y		9.6		10.7		9.6	10.0
Total Cl		ppmv	y		84.7		218.3		129.3	144.1
Arsenic		ug/dscm	y		3.5		7.4		16.6	
Beryllium		ug/dscm	y	nd	0.1	nd	0.1	nd	0.1	
Cadmium		ug/dscm	y		2.0		2.3		3.7	
Chromium		ug/dscm	y		80.9		141.0		125.2	
Copper		ug/dscm	y		275.9		177.6		111.2	
Iron		ug/dscm	y		1428.3		2041.4		2097.6	
Lead		ug/dscm	y		37.4		19.9		20.4	
Mercury		ug/dscm	y		0.044		0.046		0.085	0.058
Nickel		ug/dscm	y		234.1		332.0		348.0	
Vanadium		ug/dscm	y	nd	2.2	nd	2.3	nd	2.1	
Zinc		ug/dscm	y		1139.8		234.2		281.0	
SVM		ug/dscm	y		39.4		22.2		24.1	28.6
LVM		ug/dscm	y		84.5		148.4		141.8	124.9

Carbon Tetrachloride	DRE	%				99.99974
Sampling Train	Metals					
Moisture			4.6	4.6	5.6	
Oxygen			9.0	9.2	7.9	
Stack gas flowrate			45013.0	45070.0	44321.0	
Temperature			125.6	129.9	128.4	

0.014227
9.044023
3.75
3.432527
4.125052

2.533852
0.126693
7.582065
44.4792
260.3149
433.539
95.33235
4.57699
129.7768
3.167315
408.898

0.014719
17.49174
4.186667
2.752665
3.676917

2.294168
0.114708
1.8927
13.36519
71.94636
307.4612
11.25086
27.21632
1131.394

2.86771
150.6174

0.013071
19.71614
3.296667
9.869414
2.863497

7.799963
0.084991
3.095096
15.55909
73.95207
496.2854
19.72999
0.11176
779.2374
2.124779
169.2586

0.014743
14.6179
3.003333

17.78294
8.559379

1.627824
0.081391
2.171232
137.8349
62.21247
1638.346
40.62706
17.76597
268.6381
2.03478
564.8428

0.012534
17.70581
3.266667
124.1406
9.96891

9.151654
0.088226
2.655658
115.7127
188.2462
1855.787
25.914
0.058261
304.7425
2.20566
551.6579

Feedstreams 2

			R1		R2		R3		R1		R2
			Liq waste primary						Liq waste secondary		

221C1

Feedrate	lb/hr		5004		5004		5004		2226		2226
Heating value	Btu/lb		11499		11200		11197		11499		11200
Ash	wt %		1.23		1.22		1.29		1.23		1.22
Chlorine	ppmw		333300		332900		338700		333300		332900
Arsenic	ppmw	1	0.83	1	0.83	1	0.83	1	0.83	1	0.83
Beryllium	ppmw	1	0.42	1	0.42	1	0.42	1	0.42	1	0.42
Cadmium	ppmw	1	0.63	1	0.63	1	0.63	1	0.63	1	0.63
Chromium	ppmw		0.25		0.38		0.48		0.25		0.38
Lead	ppmw		1.25		1.67		1.88		1.25		1.67
Mercury	ppmw	1	0.1	1	0.1		0.15	1	0.1	1	0.1
Nickel	ppmw		0.27		0.21		0.42		0.27		0.21
		4		4		3		4		4	
Stack Gas Flowrate			39839		41252		47173		39839		41252
Oxygen			11.5		12.5		12.8		11.5		12.5
Feedrate MTEC Calculations											
Ash	mg/dscm		609		652		625		271		290
Chlorine	ug/dscm		1.65E+07		1.78E+07		1.64E+07		7.34E+06		7.91E+06
Arsenic	ug/dscm	1	41	1	44	1	40	1	18	1	20
Beryllium	ug/dscm	1	21	1	22	1	20	1	9	1	10
Cadmium	ug/dscm	1	31	1	34	1	31	1	14	1	15
Chromium	ug/dscm		12		20		23		6		9
Lead	ug/dscm		62		89		91		28		40
Mercury	ug/dscm	1	5	1	5		7	1	2	1	2
Nickel	ug/dscm		13		11		20		6		5
SVM	ug/dscm		77		106		106		34		47
LVM	ug/dscm		43		54		54		19		24

221C2

Feedrate	lb/hr		2406		2406		2406		5646		5646
Heating value	Btu/lb		10231		10053		9198		10231		10053
Ash	wt %		1.87		1.92		2.38		1.87		1.92
Chlorine	ppmw		337800		345800		331400		337800		345800
Arsenic	ppmw	1	0.83	1	0.83	1	0.83	1	0.83	1	0.83
Beryllium	ppmw	1	0.42	1	0.42	1	0.42	1	0.42	1	0.42
Cadmium	ppmw	1	0.63	1	0.63	1	0.63	1	0.63	1	0.63
Chromium	ppmw		1.69		2		2.54		1.69		2

Lead	ppmw		2.29		1.88		2.29		2.29		1.88
Mercury	ppmw	1	0.1	1	0.11	1	0.1	1	0.1		0.11
Nickel	ppmw		0.35		0.44		0.63		0.35		0.44
		4		4		4		4		3	
Stack Gas Flowrate			44845		43896		46375		44845		43896
Oxygen			12.1		11.8		11.6		12.1		11.8
Feedrate MTEC Calculations											
Ash	mg/dscm		422		428		492		990		1005
Chlorine	ug/dscm		7.62E+06		7.71E+06		6.85E+06		1.79E+07		1.81E+07
Arsenic	ug/dscm	1	18.7	1	18.5	1	17.1	1	44.0	1	43.4
Beryllium	ug/dscm	1	9.5	1	9.4	1	8.7	1	22.2	1	22.0
Cadmium	ug/dscm	1	14.2	1	14.0	1	13.0	1	33.4	1	33.0
Chromium	ug/dscm		38.1		44.6		52.5		89.5		104.7
Lead	ug/dscm		51.7		41.9		47.3		121.3		98.4
Mercury	ug/dscm	1	2.3	1	2.5	1	2.1	1	5.3		5.8
Nickel	ug/dscm		7.9		9.8		13.0		18.5		23.0
SVM	ug/dscm		58.8		49.0		53.8		137.9		114.9
LVM	ug/dscm		52.2		58.5		65.4		122.6		137.4

221C3

Feedrate	lb/hr		4644		4644		4644		8262		8262
Heating value	Btu/lb		11398		11342		11309		11398		11342
Ash	wt %		0.79		0.94		0.82		0.79		0.94
Chlorine			318300		334900		275000		318300		334900
Arsenic	ppmw	1	1.67	1	1.67	1	1.67	1	1.67	1	1.67
Beryllium	ppmw	1	0.08	1	0.08	1	0.08	1	0.08	1	0.08
Cadmium	ppmw	1	0.13	1	0.13	1	0.13	1	0.13	1	0.13
Chromium	ppmw		1.29		1.29		1.17		1.29		1.29
Lead	ppmw		4.17		2.08		2.5		4.17		2.08
Mercury	ppmw	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1
Nickel	ppmw	1	0.25	1	0.25	1	0.25	1	0.25	1	0.25
		5		5		5		5		5	
Stack Gas Flowrate			45282		44001		43523		45282		44001
Oxygen			8.4		8.2		8.7		8.4		8.2
Feedrate MTEC Calculations											
Ash	mg/dscm		241		290		266		428		516
Chlorine	ug/dscm		9.70E+06		1.03E+07		8.93E+06		1.73E+07		1.84E+07
Arsenic	ug/dscm	1	50.88	1	51.54	1	54.23	1	90.52	1	91.70
Beryllium	ug/dscm	1	2.44	1	2.47	1	2.60	1	4.34	1	4.39
Cadmium	ug/dscm	1	3.96	1	4.01	1	4.22	1	7.05	1	7.14
Chromium	ug/dscm		39.30		39.82		37.99		69.92		70.84
Lead	ug/dscm		127.05		64.20		81.18		226.03		114.21

Mercury	ug/dscm	1	3.05	1	3.09	1	3.25	1	5.42	1	5.49
Nickel	ug/dscm		7.62	1	7.72	1	8.12	1	13.55	1	13.73
SVM	ug/dscm		129.0		66.2		83.3		229.6		117.8
LVM	ug/dscm		66.0		66.8		66.4		117.4		118.9

221C4

Feedrate	lb/hr		2094		2094		2094		5538		5538
Heating value	Btu/lb		12644		12544		12124		12644		12544
Ash	wt %		0.32		0.31		0.36		0.32		0.31
Chlorine	ppmw		238500		297500		286900		238500		297500
Arsenic	ppmw	1	1.67	1	1.67	1	1.67	1	1.67	1	1.67
Beryllium	ppmw	1	0.08	1	0.08	1	0.08	1	0.08	1	0.08
Cadmium	ppmw		0.21		0.21		0.21		0.21		0.21
Chromium	ppmw		3.13		2.67		3		3.13		2.67
Lead	ppmw		5.42		3.75		6.67		5.42		3.75
Mercury	ppmw	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1
Nickel	ppmw		0.63		0.42		0.63		0.63		0.42
		3		3		3		3		3	
Stack Gas Flowrate			44614		44222		45711		44614		44222
Oxygen			8.2		7.5		8.2		8.2		7.5
Feedrate MTEC Calculations											
Ash	mg/dscm		44		41		48		116		108
Chlorine	ug/dscm		3.27E+06		3.91E+06		3.84E+06		8.66E+06		1.03E+07
Arsenic	ug/dscm	1	22.9	1	21.9	1	22.4	1	60.6	1	58.0
Beryllium	ug/dscm	1	1.1	1	1.1	1	1.1	1	2.9	1	2.8
Cadmium	ug/dscm		2.9		2.8		2.8		7.6		7.3
Chromium	ug/dscm		43.0		35.1		40.2		113.6		92.7
Lead	ug/dscm		74.4		49.2		89.4		196.8		130.2
Mercury	ug/dscm	1	1.4	1	1.3	1	1.3	1	3.6	1	3.5
Nickel	ug/dscm		8.6		5.5		8.4		22.9		14.6
SVM	ug/dscm		77.3		52.0		92.2		204.4		137.5
LVM	ug/dscm		55.0		46.5		51.9		145.4		123.1

221C5

Feedrate	lb/hr		5988		5988		5988		5724		5724
Heating value	Btu/lb		12069		11904		12016		12069		11904
Ash	wt %		0.21		0.22		0.21		0.21		0.22
Chlorine	ppmw		341000		340000		319700		341000		340000
Arsenic	ppmw	1	1.67	1	1.67	1	1.67	1	1.67	1	1.67

Beryllium	ppmw	1	0.08	1	0.08	1	0.08	1	0.08	1	0.08
Cadmium	ppmw	1	0.13	1	0.13	1	0.13	1	0.13	1	0.13
Chromium	ppmw		1.75		1.58		1.83		1.75		1.58
Lead	ppmw		3.75		2.92		3.75		3.75		2.92
Mercury	ppmw		0.3		0.11		0.13		0.3		0.11
Nickel	ppmw	1	0.25	1	0.25	1	0.25	1	0.25	1	0.25
Stack Gas Flowrate			45013		45070		44321		45013		45070
Oxygen			9.0		9.2		7.9		9.0		9.2
Feedrate MTEC Calculations											
Ash	mg/dscm		87		93		81		83		89
Chlorine	ug/dscm		1.42E+07		1.43E+07		1.23E+07		1.35E+07		1.37E+07
Arsenic	ug/dscm	1	69	1	70	1	64	1	66	1	67
Beryllium	ug/dscm	1	3	1	3	1	3	1	3	1	3
Cadmium	ug/dscm		5	1	5	1	5	1	5	1	5
Chromium	ug/dscm		73		67		71		69		64
Lead	ug/dscm		156		123		145		149		118
Mercury	ug/dscm	1	12		5		5		12		4
Nickel	ug/dscm		10	1	11	1	10	1	10	1	10
SVM	ug/dscm		161		129		150		151		120
LVM	ug/dscm		109		103		104		104		99

	R3	R1	R2	R3	R1	R2	R3
		Drummed Waste			T-ox Wastewater		
	2226						
	11197						
	1.29						
	338700						
1	0.83						
1	0.42						
1	0.63						
	0.48						
	1.88						
	0.15						
	0.42						
3							
	47173	39839	41252	47173	39839	41252	47173
	12.8	11.5	12.5	12.8	11.5	12.5	12.8
	278						
	7.30E+06						
1	18						
1	9						
1	14						
	10						
	40						
	3						
	9						
	47						
	24						
	5646	6318	6318	6318	3960	3960	3960
	9198	4054	3814	4804			
	2.38	7.51	15.54	7.91	0.54	0.49	0.54
	331400	100200	103100	114100	100	100	150
1	0.83	1 2.22	1 2.22	1 0.22	1 1	1 1	1 1
1	0.42	1 0.11	1 0.11	1 0.11	1 0.05	1 0.05	1 0.05
1	0.63	1 0.17	1 0.17	1 0.17	1 0.075	1 0.075	1 0.075
	2.54	0.33	24.5	9.4	0.3	0.2	0.27

	2.29	1	1.67		223		2.08	1	0.75	1	0.75	1	0.75
1	0.1	1	0.1		0.76		0.12	1	0.1	1	0.1	1	0.1
	0.63		10800		21600		29700		0.2		0.19		0.29
4		5		3		3		5		5		5	
	46375		44845		43896		46375		44845		43896		46375
	11.6		12.1		11.8		11.6		12.1		11.8		11.6
	1154		4450		9100		4291		201		180		184
	1.61E+07		5.94E+06		6.04E+06		6.19E+06		3.71E+03		3.67E+03		5.10E+03
1	40.2	1	131.5	1	130.0	1	11.9	1	37.1	1	36.7	1	34.0
1	20.4	1	6.5	1	6.4	1	6.0	1	1.9	1	1.8	1	1.7
1	30.5	1	10.1	1	10.0	1	9.2	1	2.8	1	2.8	1	2.6
	123.1		19.6		1434.8		510.0		11.1		7.3		9.2
	111.0	1	99.0		13059.2		112.8	1	27.9	1	27.5	1	25.5
1	4.8	1	5.9		44.5		6.5	1	3.7	1	3.7	1	3.4
	30.5		639949		1264931		1611278		7.4		7.0		9.9
	126.3		54.5		13064		117		15.3		15.1		14.0
	153.4		88.6		1503.0		518.9		30.6		26.6		27.0
	8262								3966		3966		3966
	11309												
	0.82								0.51		0.51		0.5
	275000								100		100		100
1	1.67							1	1	1	1	1	1
1	0.08							1	0.05	1	0.05	1	0.05
1	0.13							1	0.075	1	0.075	1	0.075
	1.17								0.33		0.2	1	0.1
	2.5							1	0.75	1	0.75	1	0.75
1	0.1							1	0.1	1	0.1	1	0.1
1	0.25							1	0.43		0.38		0.15
5								6		5		6	
	43523								45282		44001		43523
	8.7								8.4		8.2		8.7
	474								133		134		139
	1.59E+07								2.60E+03		2.64E+03		2.77E+03
1	96.48							1	26.02	1	26.36	1	27.73
1	4.62							1	1.30	1	1.32	1	1.39
1	7.51							1	1.95	1	1.98	1	2.08
	67.59								8.59		5.27	1	2.77
	144.43							1	19.51	1	19.77	1	20.80

1	5.78							1	2.60	1	2.64	1	2.77
1	14.44							1	11.19		10.02		4.16
	148.2								10.7		10.9		11.4
	118.1								22.2		19.1		15.9

	5538		13062		13062		13062		3366		3366		3366
	12124		3835		3934		3791		0		0		0
	0.36		1.03		1.22		1.87		0.52		0.5		0.51
	286900		185600		175500		193100		100		100		
1	1.67	1	2.22	1	2.22	1	2.22	1	1	1	1	1	1
1	0.08	1	0.11	1	0.11	1	0.11	1	0.05	1	0.05	1	0.05
	0.21	1	0.17	1	0.17	1	0.17	1	0.075	1	0.075	1	0.075
	3		0.5		0.5		0.62		0.66		0.24		0.26
	6.67	1	1.67	1	1.67	1	1.67		1		0.76	1	0.75
1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1
	0.63		0.83		1.17		5.14		0.18		0.35		0.38
3		5		5		5		4		4		5	
	45711		44614		44222		45711		44614		44222		45711
	8.2		8.2		7.5		8.2		8.2		7.5		8.2

	128		882		999		1563		115		106		110
	1.02E+07		1.59E+07		1.44E+07		1.61E+07		2.21E+03		2.11E+03		0.00E+00
1	59.2	1	190.1	1	181.8	1	185.5	1	22.1	1	21.1	1	21.5
1	2.8	1	9.4	1	9.0	1	9.2	1	1.1	1	1.1	1	1.1
	7.4	1	14.6	1	13.9	1	14.2	1	1.7	1	1.6	1	1.6
	106.3		42.8		40.9		51.8		14.6		5.1		5.6
	236.3	1	143.0	1	136.8	1	139.6		22.1		16.0	1	16.2
1	3.5	1	8.6	1	8.2	1	8.4	1	2.2	1	2.1	1	2.2
	22.3		71.1		95.8		429.5		4.0		7.4		8.2
	243.8		78.8		75.3		76.9		22.9		16.8		8.9
	137.3		142.6		136.4		149.2		26.1		16.1		16.9

	5724		5004		5004		5004
	12016		3632		3632		3632
	0.21		1.22		1.22		1.22
	319700		177600		177600		177600
1	1.67	1	6.78	1	2.22	1	2.22

1	0.08	1	0.34	1	0.11	1	0.11
1	0.13	1	0.51	1	0.17	1	0.17
	1.83		1.3		0.58		0.58
	3.75		6.43	1	1.67	1	1.67
	0.13		0.24	1	0.1	1	0.1
1	0.25		73.3		1.32		1.32
	44321		45013		45070		44321
	7.9		9.0		9.2		7.9
	77		423		430		394
	1.18E+07		6.16E+06		6.26E+06		5.73E+06
1	62	1	235	1	78	1	72
1	3	1	12	1	4	1	4
1	5	1	18	1	6	1	5
	68		45		20		19
	138		223	1	59	1	54
	5		8	1	4	1	3
1	9		2542		46		43
	141		232		32		30
	100		169		61		56

R1	R2	R3	R1	R2	R3	R1
Waste Sludge			221 Contaminated Dirt			Spike (CCl4)
						1126
						922078
39839	41252	47173	39839	41252	47173	39839
11.5	12.5	12.8	11.5	12.5	12.8	11.5
						1.03E+07
						1940
						922078

												44845
												12.1
												1.68E+07
	6444		6444		6444		6228		6228		6228	2743
	100		100		100		100		100		100	
	8.0		7.66		7.31		97.7		53.8		62.1	
	2750		2800		2800		105000		127000		56000	922078
	174		160		110		27.9		32.6		22.7	
1	0.1	1	0.1	1	0.1		4.21		4.31		3.64	
	2.45		2.29		1.52		3.16		3.51		2.27	
	46.4		46.6		29		89.5		61.7		45	
	18		19		11		33.2		27.1		4.09	
	0.43		0.36		0.53	1	0.1		0.13	1	0.1	
	49.6		47.8		35.6		373		108		90.9	
1		1		1		1				1		
	45282		44001		43523		45282		44001		43523	45282
	8.4		8.2		8.7		8.4		8.2		8.7	8.4
	3382		3281		3294		39920		22269		27043	
	1.16E+05		1.20E+05		1.26E+05		4.29E+06		5.26E+06		2.44E+06	1.66E+07
	7356.22		6852.50		4956.45		1139.99		1349.40		988.55	
1	4.23	1	4.28	1	4.51		172.02		178.40		158.52	
	103.58		98.08		68.49		129.12		145.29		98.85	
	1961.66		1995.79		1306.70		3656.97		2553.92		1959.67	
	760.99		813.73		495.64		1356.55		1121.74		178.11	

18.18	15.42	23.88	1	4.09	5.38	1	4.35	
2096.95	2047.19	1604.09		15241	4470.40		3958.54	
			1			1		
865	912	564		1486	1267		277	
9320	8850	6265		4969	4082		3107	
								3124
								922078
								44614
								8.2
								1.89E+07
5076	5076	5076						2981
100	100	100						
11.9	12.18	12.7						
2500	2600	2600						922078
215	228	190						

1	0.1	1	0.1	1	0.1	
	3.14		3.31		2.74	
	59.8		63.6		53.9	
	22		26		19	
	0.76		0.92		1.08	
	63.2		58		50.8	
	45013		45070		44321	45013
	9.0		9.2		7.9	9.0
	4186		4352		4156	
	8.79E+04		9.29E+04		8.51E+04	1.90E+07
	7563		8146		6218	
1	4	1	4	1	3	
	110		118		90	
	2104		2272		1764	
	774		929		622	
	27		33		35	
	2223		2072		1662	
	884		1047		711	
	9668		10420		7983	

R2	R3	R1 Total	R2	R3	Average
640	1216				
922078	922078				
41252	47173	39839	41252	47173	
12.5	12.8	11.5	12.5	12.8	
		8.80E+02	9.42E+02	9.03E+02	9.08E+02
6.30E+06	1.09E+07	3.41E+07	3.20E+07	3.46E+07	3.35E+07
		4	4	10	6
		112	153	154	140
		63	78	77	72
1792	2095				
922078	922078				

43896	46375				
11.8	11.6				
		6.06E+03	1.07E+04	6.12E+03	7.63E+03
1.53E+07	1.66E+07	4.82E+07	4.72E+07	4.57E+07	4.70E+07
		9	53	12	25
		267	13243	312	4607
		294	1726	765	928
3135	2983				
922078	922078				
44001	43523				
8.2	8.7				
		4.41E+04	2.65E+04	3.12E+04	3.39E+04
1.92E+07	1.92E+07	4.80E+07	5.33E+07	4.66E+07	4.93E+07

		19	26	22	22
		2720	2374	1084	2059
		14495	13137	9573	12401
3800	3260				
922078	922078				
44222	45711				
7.5	8.2				
		1.16E+03	1.25E+03	1.85E+03	1.42E+03
2.20E+07	1.92E+07	4.67E+07	5.06E+07	4.94E+07	4.89E+07
		8	8	8	8
		383	282	422	362
		369	322	355	349
2981	2981				
922078	922078				

45070	44321				
9.2	7.9				
		4.78E+03	4.96E+03	4.71E+03	4.82E+03
1.93E+07	1.77E+07	5.30E+07	5.37E+07	4.77E+07	5.15E+07
		53	44	47	48
		1428	1328	1032	1263
		10050	10684	8244	9659

Process Information

221C1

Kiln Combustion Temperature	F	1600	1600	1600
Afterburner Combustion Temperature	F	1640	1640	1640

221C2

Kiln Combustion Temperature	F	1608	1608	1608
Afterburner Combustion Temperature	F	1816	1816	1816

221C3

Kiln Combustion Temperature	F	1794	1794	1794
Afterburner Combustion Temperature	F	2227	2227	2227

221C4

Kiln Combustion Temperature	F	2034	2034	2034
Afterburner Combustion Temperature	F	2236	2236	2236

Combustion Temperature	F	2130	2130	2130
Combustion Temperature	F	2236	2279	2279