

US EPA ARCHIVE DOCUMENT

A	B	C
1	<b>Source Description</b>	
2		
3	Phase I ID No.	491
4	EPA ID No.	IND005081542
5	Facility Name	Essroc Corporation
6	Facility Location	
7	City	Logansport
8	State	IN
9	Unit ID Name/No.	Kiln No. 2
10	Other Sister Facilities	None (other unit # 300 Kiln No. 1 shares a stack)
11	Number of Sister Facilities	0
12	Combustor Class	Cement Kiln (CK)
13	Combustor Type	Wet, long
14	Combustor Characteristics	
15	Capacity (MMBtu/hr)	
16	APCS Detailed Acronym	ESP
17	APCS General Class	ESP
18	APCS Characteristics	Research Cottrell, 54,000 ft2 plate area
19	Hazardous Wastes	Liq, solid
20	Haz Waste Description	
21	Supplemental Fuel	coal
22		
23	Stack Characteristics	
24	Diameter (ft)	15.6
25	Height (ft)	204.0
26	Gas Velocity (ft/sec)	5.6
27	Gas Temperature (°F)	381.3

	B	C
1	<b>Condition Description</b>	
2		
3	<b>491C1</b>	
4		
5	Report Name/Date	1995 Recertification at Essroc Materials, Inc, Logansport, Indiana, APCC Project No. 95001, August 1995
6	Report Prepare	Air Pollution Characterization and Control, Ltd.
7	Testing Firm	
8	Cond Descr	CoC, MAX COMB TEMP, MAX METALS/CL FEED, MAX APCD TEMP
9	Testing Dates	May 10-11, 1995
10	Cond Dates	May-95
11		
12	<b>491C2</b>	
13		
14	Report Name/Date	1995 Recertification at Essroc Materials, Inc, Logansport, Indiana, APCC Project No. 95001, August 1995
15	Report Prepare	Air Pollution Characterization and Control, Ltd.
16	Testing Firm	
17	Cond Descr	CoC, MIN COMB TEMP, MAX CL FEED, MAX PROD RATE
18	Testing Dates	May 11-12, 1995
19	Cond Dates	May-95

	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	<b>Stack Gas Emissions 2</b>													
2														
3														
4	<b>491C1</b>					R1		R2		R3		R4		Cond Avg
5														
6	PM	E1	gr/dscf			0.06000				0.06600		0.06200		0.06267
7	CO (RA)	E1	ppmv			968.30		634.10		493.98		860.99		739.34
8	HC (RA)	E1	ppmv			22.55		13.66		12.47		18.75		16.86
9	HCl	E1	ppmv			1.45				1.45		1.73		1.54
10	Cl2	E1	ppmv			0.24				0.25		0.27		0.26
11	Total Chlorine	E1	ppmv			1.93				1.96		2.27		2.05
12	Antimony	E2	ug/dscm			2.29		4.47		2.22				2.99
13	Arsenic	E2	ug/dscm			24.57		26.98		23.29				24.94
14	Barium	E2	ug/dscm			44.54		77.45		44.79				55.59
15	Beryllium	E2	ug/dscm			0.20		0.25		0.36				0.27
16	Cadmium	E2	ug/dscm			32.19		27.72		24.44				28.12
17	Chromium	E2	ug/dscm			43.93		27.89		78.04				49.95
18	Lead	E2	ug/dscm			921.49		983.94		853.76				919.73
19	Mercury	E2	ug/dscm			21.26		25.49		32.68				26.47
20	Silver	E2	ug/dscm			1.62		0.99		2.01				1.54
21	Thallium	E2	ug/dscm			6.75		0.74		4.87				4.12
22	SVM	E2	ug/dscm			953.68		1011.66		878.19				947.84
23	LVM	E2	ug/dscm			68.70		55.11		101.69				75.17
24														
25	Sampling Train	Partic E1												
26	Stack Gas Flowrate		dscfm			88709				97687		89263		
27	O2		%			9.39				9.21		9.13		
28	Moisture		%			31.09				29.95		29.88		
29	Temperature		°F			380				384		376		
30														
31	Sampling Train	Metal E2												
32	Stack Gas Flowrate		dscfm			105162		84461		97528				
33	O2		%			9.39		9.21		9.21				
34	Moisture		%			31.09		30.52		29.95				
35	Temperature		°F			379		386		383				
36														
37	<b>491C2</b>					R1		R2		R3		R4		Cond Avg
38														
39	CO (RA)	E1	ppmv			1553.81		1395.07		1447.95				1465.61
40	HC (RA)	E1	ppmv			28.20		14.41		19.88				20.83
41														
42	1,2,4-Trichlorobenzene	E1	%			99.9999		99.9999		99.9999				
43	trichloroethene	E1	%			99.9992		99.9992		99.9993				
44														
45	Sampling Train	Dioxin E1												
46	Stack Gas Flowrate		dscfm			83821		85632		82258				
47	O2		%			11.17		9.63		9.03				
48	Moisture		%			28.67		29.17		29.46				
49	Temperature		°F			370		360		357				

	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		
1	<b>Feedstream 2</b>																													
2																														
3	<b>491C1</b>																													
4			R1		R2		R3		R4		R1		R2		R3		R4		R1		R2		R3		R4					
5	Feedstream Number		F1		F1		F1		F1		F2		F2		F2		F2		F3		F3		F3		F3					
6	Feed Class		Liq HW		Liq HW		Liq HW		Liq HW		Solid HW		Solid HW		Solid HW		Solid HW		Raw Material		Raw Material		Raw Material		Raw Material					
7	Feed Class 2																		RM		RM		RM		RM					
8	Feedstream Description		Liquid waste				Liquid waste				Solid waste				Solid waste				Raw material											
9	Feedrate	lb/hr	16854		16848		16836		16800		936		1458		1488		1038		129200		126000		127800		132600					
10	Heating Value	Btu/lb	13440		13480		13320		12600		5830		5120		5050		4820													
11	Chlorine	ppmw	38200		40000		40300		33900		0.36		0.3		0.31		0.26		58		56		79		60					
12	Antimony	ppmw	1	34	1	34	1	34	1	34	1	34	1	34	1	34	1	34	1	6	1	6	1	6	1	6	1	6	1	
13	Arsenic	ppmw	17.4		14.9		19.3		16	1	7	1	7	1	7	1	7	1	7	1	7	1	7	1	7	1	7	1	7	
14	Barium	ppmw	1544		1655		1644		1752		68		119		111		98		12	1	12	1	12	1	12	1	12	1	12	
15	Beryllium	ppmw	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.12	1	0.12	1	0.12	1	0.12	1	0.12	1	0.19	
16	Cadmium	ppmw	88.2		93.51		88.56		66.9		2		2.5		3.3		2.27		0.5	1	0.5	1	0.5	1	0.5	1	0.5	1	0.5	
17	Chromium	ppmw	510		542		506		444		135		159		212		135		10		6.5	1	6		10		10		10	
18	Lead	ppmw	1420		1485		1371		1238		59.5		77.7		98.3	1	72.3	1	6	1	6	1	6	1	6	1	6	1	6	
19	Mercury	ppmw	4		8.4		5.6		9.7	1	2	1	2	1	2	1	2	1	3	1	3	1	3	1	3	1	3	1	3	
20	Silver	ppmw	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	1.6		1.9		1.2		2		2	1	
21	Thallium	ppmw	1	21	1	21	1	21	1	21	1	21	1	21	1	21	1	21	1	11	1	11	1	11	1	11	1	11	1	
22																														
23	Gas flowrate	dscfm	105162		84461		97528		89263		105162		84461		97528		89263		105162		84461		97528		89263					
24	Oxygen	%	9.39		9.21		9.21		9.13		9.39		9.21		9.21		9.13		9.39		9.21		9.21		9.21		9.13		9.13	
25																														
26	Thermal Feedrate	MMBtu/hr	227		227		224		212		5		7		8		5													
27	Estimated Firing Rate	MMBtu/hr																												
28																														
29	<i>Feedrate MTEC Calculations</i>																													
30	Chlorine	ug/dscm	1973883		2533288		2208752		2012023		1		2		2		1		22974		26524		32867		28107		1		1	
31	Antimony	ug/dscm	1	1757	1	2153	1	1863	1	2018	1	98	1	186	1	165	1	125	1	2377	1	2842	1	2496	1	2811	1	2811	1	
32	Arsenic	ug/dscm	899		944		1058		950		20		38		34		26		2773		3315		2912		3279		3279		3279	
33	Barium	ug/dscm	79782		104815		90104		103984		195		652		538		359		4753		5684		4992		5621		5621		5621	
34	Beryllium	ug/dscm	1	52	1	63	1	55	1	59	1	3	1	5	1	5	1	4	1	48	1	57	1	50	1	89	1	89	1	
35	Cadmium	ug/dscm	4558		5922		4854		3971		6		14		16		8		198	1	237	1	208	1	234	1	234	1	234	
36	Chromium	ug/dscm	26353		34326		27733		26352		387		871		1027		495		3961		3079		2496		4685		4685		4685	
37	Lead	ug/dscm	73375		94048		75141		73477		171		426		476	1	265	1	2377	1	2842	1	2496	1	2811	1	2811	1	2811	
38	Mercury	ug/dscm	207		532		307		576	1	6	1	11	1	10	1	7	1	1188	1	1421	1	1248	1	1405	1	1405	1	1405	
39	Silver	ug/dscm	1	155	1	190	1	164	1	178	1	9	1	16	1	15	1	11		634		900		499		937		937	1	
40	Thallium	ug/dscm	1	1085	1	1330	1	1151	1	1246	1	60	1	115	1	102	1	77	1	4357	1	5210	1	4576	1	5153	1	5153	1	
41	SVM	ug/dscm	77932		99971		79995		77448		176		440		492		273		2575		3079		2704		3045		3045		3045	
42	LVM	ug/dscm	27304		35333		28845		27361		410		915		1066		524		6781		6451		5458		8053		8053		8053	
43																														
44																														
45																														
46	<b>491C2</b>																													
47			R1		R2		R3		R1		R2		R3		R1		R2		R3		R1		R2		R3					
48	Feedstream Number		F1		F1		F1		F2		F2		F2		F3		F3		F3		F3		F3		F3					
49	Feed Class		Liq HW		Liq HW		Liq HW		Solid HW		Solid HW		Solid HW		Raw material		Raw material		Raw material		Raw material		Raw material		Raw material					
50	Feedstream Description		Liquid waste				Liquid waste				Solid waste				Raw material															
51	Feed Rate	lb/hr	16374		16044		14424		1638		1524		1254																	
52		lb/hr	0		0		0		0		0		0																	
53	Chlorine	lb/hr	25000		26800		24200		0.3602		0.35		0.31		67		66		68											
54	Antimony	lb/hr	1	34	1	34	1	34	1	34	1	34	1	34	1	34	1	34	1	6	1	6	1	6	1	6	1	6	1	
55	Arsenic	Btu/lb	1	7	1	7	1	12.7	1	7	1	7	1	7	1	7	1	7	1	7	1	7	1	7	1	7	1	7	1	
56	Barium	lb/hr	3073		2330		2216		94		110		126		1		1		12	1	12	1	12	1	12	1	12	1	12	
57	Beryllium	lb/hr	1	1	1	1	1	1	1	1	1	1	1	1	0.12	1	0.12	1	0.12	1	0.12	1	0.12	1	0.12	1	0.12	1	0.12	
58	Cadmium	lb/hr	12.25		21.73		25.94		3.33		1.14		4.38		1		0.5	1	0.5	1	0.5	1	0.5	1	0.5	1	0.5	1	0.5	
59	Chromium	lb/hr	244		245		260		205		255		302		10		10		10		10		10		10		10		10	
60	Lead	lb/hr	864		868		862		93.6		113.5		137.8		1		6	1	6	1	6	1	6	1	6	1	6	1	6	

	B	AD	AE	AF	AG	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
1	<b>Feedstream 2</b>																														
2																															
3	<b>491C1</b>	R1	R2	R3	R4	R1	R2	R3	R4	R1	R2	R3	R4	R1	R2	R3	R4	R1	R2	R3	R4	R1	R2	R3	R4	R1	R2	R3			
4																															
5	Feedstream Number	F4	F4	F4	F4	F5	F5	F5	F5	F6	F6	F6	F6	F7	F7	F7	F7	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
6	Feed Class	Misc. Fuel	Misc. Fuel	Misc. Fuel	Misc. Fuel	Spike	Spike	Spike	Spike	Spike	Spike	Spike	Spike	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	
7	Feed Class 2	MF	MF	MF	MF									Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	
8	Feedstream Description	Coke	Coke	Coke	Coke	Liquid waste	Liquid waste	Liquid waste	sLiquid waste	Solid waste	sLiquid waste	Solid waste	sLiquid waste	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	
9	Feedrate					1800																									
10	Heating Value	14290	14120			14250																									
11	Chlorine	77	1	77	1	77																									
12	Antimony	10	1	10	1	10																									
13	Arsenic	11	1	11	1	11	1043.3	1134	1179		4418	4830	4840																		
14	Barium	10	1	10	1	10																									
15	Beryllium	0.44	1	0.44	1	0.44	99.8	149.7	113.4		44.9	48.5	49																		
16	Cadmium	0.6	1	0.6	1	0.6	0	0	0		295	331	322																		
17	Chromium	2		2.2		2	2676	3084	3492		18021	19854	19890																		
18	Lead	10	1	10	1	10			3221		15826	17436	17436																		
19	Mercury	4	1	4	1	4																									
20	Silver	0.6	1	0.6	1	0.6																									
21	Thallium	18	1	18	1	18																									
22																															
23	Gas flowrate	105162	84461	97528	89263	105162	84461	97528	89263	105162	84461	97528	89263	105162	84461	97528	89263	105162	84461	97528	89263	105162	84461	97528	89263	105162	84461	97528	89263	105162	
24	Oxygen	9.39	9.21	9.21	9.13	9.39	9.21	9.21	9.13	9.39	9.21	9.21	9.13	9.39	9.21	9.21	9.13	9.39	9.21	9.21	9.13	9.39	9.21	9.21	9.13	9.39	9.21	9.21	9.13	9.39	
25																															
26	Thermal Feedrate					26																							232	235	
27	Estimated Firing Rate																											316	365		
28																															
29	<i>Feedrate MTEC Calculation:</i>																														
30	Chlorine	0	1	0	0	1	490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1996859	2559813	2241621			
31	Antimony	0	1	0	0	1	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4231	5181	4524			
32	Arsenic	0	1	0	0	1	70	7045	9389	8454	0	29835	39991	34705	0	40572	53678	47163													
33	Barium	0	1	0	0	1	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84731	111151	95634				
34	Beryllium	0	1	0	0	1	3	674	1239	813	0	303	402	351	0	1079	1767	1274													
35	Cadmium	0	1	0	0	1	4	0	0	0	0	1992	2741	2309	0	6753	8913	7387													
36	Chromium	0		0	0		13	18071	25535	25039	0	121697	164387	142621	0	170469	228198	198916													
37	Lead	0	1	0	0	1	64	0	0	23096	0	106874	144367	125024	0	182796	241683	226234													
38	Mercury	0	1	0	0	1	25	0	0	0	0	0	0	0	0	804	1248	936													
39	Silver	0	1	0	0	1	4	0	0	0	0	0	0	0	0	797	1106	678													
40	Thallium	0	1	0	0	1	114	0	0	0	0	0	0	0	0	5503	6655	5829													
41	SVM	0		0	0		67	0	0	23096	0	108866	147107	127333	0	189549	250596	233621													
42	LVM	0		0	0		85	25791	36164	34306	0	151835	204780	177677	0	212121	283643	247353													
43																															
44																															
45																															
46	<b>491C2</b>	R1	R2	R3		R1	R2	R3		R1	R2	R3		R1	R2	R3		R1	R2	R3											
47																															
48	Feedstream Number	F4	F4	F4																						F5	F5	F5			
49	Feed Class	Misc. Fuel	Misc. Fuel	Misc. Fuel										Total	Total	Total		Total	Total	Total					Total	Total	Total				
50	Feedstream Description	Coke				Liquid waste spike								Solid waste spike																	
51	Feed Rate	4200	1000	3200																											
52		0	0	0																											
53	Chlorine	102	1	77	1	77																									
54	Antimony	10	1	10	1	10																									
55	Arsenic	11		11		11																									
56	Barium	10	1	10	1	10																									
57	Beryllium	0.44	1	0.44	1	0.44																									
58	Cadmium	0.6	1	0.6	1	0.6																									
59	Chromium	2	1	2		2.4																									
60	Lead	10	1	10	1	10																									

	B	BH	BI	BJ	BK	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF
1	<b>Feedstream 2</b>																			
2																				
3	<b>491C1</b>	R4		Cond Avg		R1		R2		R3		R4		R1		R2		R3		R4
4																				
5	Feedstream Number	F7		F7																
6	Feed Class	Total		Total																
7	Feed Class 2	Total		Total	Spike	Spike	Spike	Spike	HW	HW	HW	HW								
8	Feedstream Description	Total		Total																
9	Feedrate																			
10	Heating Value																			
11	Chlorine																			
12	Antimony																			
13	Arsenic																			
14	Barium																			
15	Beryllium																			
16	Cadmium																			
17	Chromium																			
18	Lead																			
19	Mercury																			
20	Silver																			
21	Thallium																			
22																				
23	Gas flowrate	89263		94103.5																
24	Oxygen	9.13		9.235																
25																				
26	Thermal Feedrate	232		242					232	235	232	217								
27	Estimated Firing Rate	336		351																
28																				
29	<i>Feedrate MTEC Calculator:</i>																			
30	Chlorine	2040621		2209729	0	0	0	0	1973884	2533289	2208754	2012024								
31	Antimony	5017		4646	0	0	0	0	1854	2340	2028	2143								
32	Arsenic	4324		47138	36880	49381	43159	0	919	982	1092	975								
33	Barium	110029		97172	0	0	0	0	79977	105467	90642	104344								
34	Beryllium	155		1373	977	1641	1164	0	55	69	60	63								
35	Cadmium	4217		7684	1992	2741	2309	0	4563	5936	4870	3979								
36	Chromium	31544		199194	139768	189922	167660	0	26740	35197	28760	26847								
37	Lead	76617		216904	106874	144367	148120	0	73545	94474	75618	73743								
38	Mercury	1307		996	0	0	0	0	212	543	317	583								
39	Silver	1130		861	0	0	0	0	164	206	179	189								
40	Thallium	6591		5996	0	0	0	0	1145	1445	1253	1323								
41	SVM	80834		224589	108866	147107	150429	0	78109	100410	80487	77722								
42	LVM	36024		247706	177625	240944	211983	0	27714	36248	29911	27886								
43																				
44																				
45																				
46	<b>491C2</b>	R4		Cond Avg																
47																				
48	Feedstream Number	F5		F5																
49	Feed Class	Total		Total																
50	Feedstream Description																			
51	Feed Rate																			
52																				
53	Chlorine																			
54	Antimony																			
55	Arsenic																			
56	Barium																			
57	Beryllium																			
58	Cadmium																			
59	Chromium																			
60	Lead																			

	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
61	Mercury		lb/hr		8.6		3.3		5.3			1	2	1	2	1	2		1		3	1	3	1	3			1
62	Silver		lb/hr	1	3	1	3	1	3			1	3	1	3	1	3				1.6		1.7		1.7			1
63	Thallium		lb/hr	1	21	1	21	1	21			1	21	1	21	1	21				1	11	1	11	1	11		1
64																												
65			correct units?		525.2																							



	B	AD	AE	AF	AG	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
61	Mercury		4	1		4	1																								
62	Silver		0.6	1		0.6	1																								
63	Thallium		18	1		18	1																								
64																															
65																															

	B	BH	BI	BJ	BK	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF
61	Mercury																			
62	Silver																			
63	Thallium																			
64																				
65																				

	C	D	E	F	G	H
1	<b>Process Information 2</b>					
2						
3	<b>491C1</b>		R1	R2	R3	R4
4						
5	Combustion Temperature Back End	F	596	600	596	606
6						
7	<b>491C2</b>					
8						
9	Combustion Temperature Back End	F	460	456	448	

	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	<b>491C2</b>	I-TEF			R1				R2				R3	
2		Wght Fact		Total	Total	TEQ		Total	Total	TEQ		Total	Total	TEQ
3	ng/dscm			Full ND	1/2 ND	1/2 ND		Full ND	1/2 ND	1/2 ND		Full ND	1/2 ND	1/2 ND
4														
5														
6														
7	Total PCDD/PCDF			34.15				14.59				18.99		
8	TEQ			2.18				1.32				1.36		