Table IIA-1
ASH GROVE CEMENT COMPANY, SEATTLE PLANT
2003
IDENTIFICATION OF NON-FUGITIVE SOURCES AND CALCULATION OF EMISSION FACTORS

	ASH GROVE Seattle Plant Unit Id.	Equipment Number	PSCAA Point Number	Control Equipment Number	Plant Location	Design Capacity, acfm	Year Installed	Pollutant	Potential Emissions(1) kg/hr	Max. Design Mg/hr	Process Quantity Type	Emission Factor kg/Mg	Process Quantity Type	Process Quantity Mg/year 2002	Contaminant kg/year 2002
1	KN	41B.BF3	1	34	#1 COAL MILL	10400	1990	PM	0.202	10	Coal (wet) to Mill # 1	2.03E-02	Coal (wet) to Mill # 1	27843	565
								CO	(2)	(2)	"	(3)	"	27843	34611
								NOx	(2)	(2)	"	(3)	"	27843	29927
								SO2	(2)	(2)	"	(3)	"	27843	4288
2		41B.BF4	1	34	#2 COAL MILL	10400	1990	PM	0.202	10	Coal (wet)to Mill # 2	2.03E-02	Coal (wet)to Mill # 2	27843	565
								CO	(2)	(2)	"	(3)	"	27843	34611
								NOx	(2)	(2)	"	(3)	"	27843	29927
								SO2	(2)	(2)	"	(3)	"	27843	4288
3		413.BF1	6	15	MAIN BAGHOUSE	n/a	1990	PM	(2)	(2)	Clinker from Kiln	4.14E-02	Clinker from Kiln	504407	20882
								CO	(1)	(1)	"	(1)	"	504407	1017062
								NOx	(1)	(1)	"	(1)	"	504407	879440
								SO2	(1)	(1)	"	(1)	"	504407	126010
4	RM	312BF1	3	22	TRANSFER TOWER 8	5320	1990	PM	0.104	268	Clay+Steel Scale+Silica + Bottom Ash	3.87E-04	Clay+Steel Scale+Silica + Bottom A	153187	59
5		316.BF1	21	40	FLY ASH D/C	750	1994	PM	0.015	27	Fly Ash rec'd	5.36E-04	Fly Ash rec'd	0	0
6		311.BF2	3	36	TRANSFER TOWER 3/4	4800	1990	PM	0.093	284	Limestone rec'd	3.29E-04	Limestone rec'd	615086	202
7	NotOpr 01	311.BF1	3	18	STACKER	2000	1990	PM	0.039	1021	Limestone rec'd	3.81E-05	Limestone rec'd	0	0
8		311.BF3	3	19	TRANSFER TOWER 5	3800	1990	PM	0.074	284	Limestone rec'd	2.60E-04	Limestone rec'd	615086	160
9		311BF4	3	24	331 L.S./CLAY/Bot Ash BINS	10600	1990	PM	0.206	222	Limestone+Clay +Bot Ash rec'd	9.28E-04	Limestone+Clay +Bot Ash rec'd	698925	649
10		311.BF5	3	20	TRANSFER TOWER 6	9350	1990	PM	0.182	284	Limestone+Clay + Bottom Ash rec'd	6.41E-04	Limestone+Clay + Bottom Ash rec'd	698925	448
11		41B.FN2	3	33	COAL FEEDER #2	1150	1990	PM	0.022	10	Coal (wet) used in Mill#2	2.24E-03	Coal (wet) used in Mill#2	27843	62
12		41A.BF3	3	28	COAL SILO	1300	1990	PM	0.025	181	Coal rec'd	1.39E-04	Coal rec'd	56000	8
13		41B.FN1	3	33	COAL FEEDER #1	1150	1990	PM	0.022	10	Coal (wet) used in Mill#1	2.24E-03	Coal (wet) used in Mill#1	27643	62
14		41A.BF2	3	27	TRANSFER TOWER 5	3050	1990	PM	0.059	227	Coal (wet) rec'd	2.62E-04	Coal (wet) rec'd	56000	15
15	NotOpr03	315.BF1	3	25	TRANSFER TOWER 7	2400	1990	PM	0.047	222	Total Raw Material used	2.10E-04	Limest+clay+silica+iron+FlyAsh	0	0
16		313.BF1	3	23	331 STEEL&SILICA BINS	11550	1990	PM	0.225	268	Steel Scale+Silica used	8.40E-04	Steel Scale+Silica used	75246	63
17	KF	41C.BF1	20	35	PF BIN	1250	1990	PM	0.024	16	Coal (pulverized) produced	1.49E-03	Coal (pulverized) produced	51788	77
18		411.BF1	5	31	BLEND SILOS (W)	8324	1990	PM	0.162	227	1/2 Kiln Feed produced	7.14E-04	1/2 Kiln Feed produced	371464	265
19		413.BF3	3	29	KILN FEED BLD	7600	1990	PM	0.148	207	Kiln Feed produced	7.15E-04	Kiln Feed produced	373435	267
20		317.BF1	3	30	BLEND SILOS (E)	8000	1990	PM	0.156	227	1/2 Kiln Feed produced	6.86E-04	1/2 Kiln Feed produced	371464	255
21		413.BF2	8	39	SORBENT SYS. D/C	750	1993	PM	0.015	27	Sorbent rec'd	5.36E-04	Sorbent rec'd	2022	1
22	CK	419.BF1	3	32	G-COOLER	20600	1990	PM	0.401	167	Clinker, 100 % produced.	2.40E-03	Clinker, 100 % produced.	504407	1211
23	NotOpr 00	419.FN7	10	2	CLINKER SILOS -Top(SW)	3864	1968	PM	0.075	227	Clinker, 0 % prod.+rec'd.	3.31E-04	Clinker, 0 % prod.+rec'd.	0	0
24		511.BF1	3	4	CLINKER SHED ELEV.	5000	1968	PM	0.097	227	Clinker, 15 % prod.+rec'd.	4.29E-04	Clinker, 15 % prod.+rec'd.	75661	32
		511.BF8			CLINKER SHED	20000	2002	PM	0.389	227	Clinker, 15 % prod.+rec'd.	1.72E-03	Clinker, 15 % prod.+rec'd.	75661	130
25		419.FNC	10	14	CLINKER SILOS-Top(N-center)	6000	1968	PM	0.117	167	Clinker, 85 % prod.+rec'd.	6.99E-04	Clinker, 85 % prod.+rec'd.	428746	300
26		419.FN5	10	2	CLINKER SILOS-Top(S-center)	3864	1968	PM	0.075	227	Clinker, 60% prod.+ 66% Gyp rec'd.	3.31E-04	Clinker, 60% prod.+ 66% Gyp rec'd.	319663	106
27		511.FN8			CLINKER SILOS-Bot(E)	1770	1968	PM	0.034	227	Clinker, 85% prod.+ 50% Gyp used	1.52E-04	Clinker, 85% prod.+ 50% Gyp used	442414	67
28		419.FN9	10	2	CLINKER SILOS-Top(SE)	3864	1968	PM	0.075	167	Clinker, 30% prod.+33% Gyp rec'd.	4.50E-04	Clinker, 30% prod.+33% Gyp rec'd.	159832	72
29		511.FN6			CLINKER SILOS BOT(W)	1770	1968	PM	0.034	227	Clinker, 40% prod.+ 50% Gyp used	1.52E-04	Clinker, 40% prod.+ 50% Gyp used	215431	33
30		419.FZ3	9	38	CLINKER SILOS-Top(NE)	5800	1990	PM	0.113	167	Clinker, 100 % prod.+rec'd.	6.76E-04	Clinker, 100 % prod.+rec'd.	504407	341
31		41G.BF1	15	41	CLINKER LOADOUT D/C	1000	1994	PM	0.019	227	Clinker, shipped	8.58E-05	Clinker, shipped	0	0
	CM	611.BF7	18	10	SS TANKS LOADING	1716	1960	PM	0.033	181	Cement, 6% prod.+rec'd.	1.84E-04	Cement, 6% prod.+rec'd.	31905	6
		610.BF2			GP2 SILO 19	4200	2002	PM	0.082	59	Cement, 47 % prod.+rec'd.	1.39E-03	Cement, 47 % prod.+rec'd.	249919	260
32		515.BF1	12	42	FM #1 MILL SWEEP D/C	20000	1994	PM	0.280	59	Cement, 50 % prod.	4.75E-03	Cement, 50 % prod.	265872	1263
33		610.BF1			GP2 TRANSFER BIN	3864	1968	PM	0.075	100	Cement, 3 % prod.+rec'd.	7.53E-04	Cement, 3 % prod.+rec'd.	15952	12
		610.BF3			GP2 SILO 17	4200	2002	PM	0.082	59	Cement, 47 % prod.+rec'd..	1.39E-03	Cement, 47 % prod.+rec'd..	249919	260
34		525.BF1	12	42	FM #2 MILL SWEEP D/C	20000	1994	PM	0.280	59	Cement, 50 % prod.	4.75E-03	Cement, 50 % prod.	265872	1263
35		611.BF2	15	7	GP2 RAIL LOAD	1770	1968	PM	0.034	145	Cement, 55 % prod.+rec'd.at GP2	2.37E-04	Cement, 55 % prod.+rec'd.at GP2	292459	69
36		611.BF4	16	8	GP1 SILO (N)	3200	1969	PM	0.062	59	Cement, 0.5 % prod.+rec'd.	1.06E-03	Cement, 0.5 % prod.+rec'd.	2659	3
	InOpr 97	940.543	19	13	PACK HOUSE	4150	1969	PM	0.081	36	Cement, 0 % prod.+rec'd.	2.23E-03	Cement, 0 % prod.+rec'd.	0	0
37		525.BF2	13	45	FM #2 SEPARATOR:	77000	1995	PM	0.599	59	Cement, 50 % prod.	1.02E-02	Cement, 50 % prod.	265872	2702
38		611.BF6	17	9	SS TANKS(Top)	6000	1999	PM	0.117	136	Cement, 20% prod.+rec'd.	8.58E-04	Cement, 20% prod.+rec'd.	31905	27
39		515.BF2	13	45	FM #1 SEPARATOR:	77000	1995	PM	0.599	59	Cement, 50 % prod.	1.02E-02	Cement, 50 % prod.	265872	2702
40	InOpr 95	940.551	19	11	PACK HOUSE, MASONRY	8200	1928	PM	0.160	36	Cement, 0 % prod.+rec'd.	4.40E-03	Cement, 0 % prod.+rec'd.	0	0
41		611.BF4	16	5	GP1 SILO (S)	4150	1969	PM	0.081	54	Cement, 0.0 % prod.+rec'd.	1.48E-03	Cement, 0.0 % prod.+rec'd.	0	0
42		611.BF1	15	7	GP2 TRUCK LOAD	1770	1968	PM	0.034	490	Cement, 40 % prod.+rec'd.at GP2	7.03E-05	Cement, 40 % prod.+rec'd.at GP2	212697	15
43		611.BF6			CEMENT DOME	6000	1999	PM	0.117	118	Cement, 6 % prod.+rec'd.	9.90E-04	Cement, 6 % prod.+rec'd.	31905	32
44					BULK BAG LOADING	500	2002	PM	0.010	9	Cement, 0.5 % prod.+rec'd.	1.07E-03	Cement, 0.5 % prod.+rec'd.	2659	3
45															
46															
47															

(1) Unless specified, potential hourly emissions are calculated at the allowable of 0.005 gr/dscf and assuming that acf = dcf since most of the dust collectors handle ambient air.
(2) Emission Factor calculated from other data discussed in the specific Point and Segment of Section IIA-1.
(3) Dependent upon coal usage, see discusson in Section IIA-1.

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Table IIA-2
ASH GROVE CEMENT COMPANY, SEATTLE PLANT

2003 FOR EMISSION STATEMENT

SUMMARY OF DATA

Ash Grove Unit	PSAPCA Point	PSAPCA Segment	Megagram 2003	Tons 2003	Pounds 2003
			PM	PM	PM
KN	1	01	21	23.019	46037
	1	02	1	1.245	2489
RM	2	01	2	1.905	3811
KF	3	01	1	0.954	1908
CK	4	01	2	2.527	5053
CM	5	01	9	9.498	18997
Total			36	39	
			CO	CO	CO
KN	1	01	1017	1121	2242200
	1	02	69	76	152605
RM	2	01	0	0	0
KF	3	01	0	0	0
CK	4	01	0	0	0
CM	5	01	0	0	0
Total			1086	1197	
			NOx	NOx	NOx
KN	1	01	879	969	1938800
	1	02	60	66	131955
RM	2	01	0	0	0
KF	3	01	0	0	0
CK	4	01	0	0	0
CM	5	01	0	0	0
Total			939	1035	
			SOx	SOx	SOx
KN	1	01	126	139	277800
	1	02	9	9	18907
RM	2	01	0	0	0
KF	3	01	0	0	0
CK	4	01	0	0	0
CM	5	01	0	0	0
Total			135	148	

Table IIA-3
2003 FOR EMISSION STATEMENT

RAW MATERIAL, PRODUCTION and SHIPPING

PSAPCA KN LIMIT tons/yr	2003	DATA 2003							
			TONS						
PM10	tons	Stuff	(input)	Mg	kg	lbs			
46	39	CO	1121.10	1017.06	1017061.92	2242200.00			
CO	tons	NOx	969.40	879.44	879439.68	1938800.00			
2353	1197	SOx	138.90	126.01	126010.08	277800.00			
	lbs								
	2394805								
NOx	tons								
1846	1035								
	lbs								
	2070755								
SO2	tons								
176	148.4								
	lbs								
	296707								

POINT	MATERIAL	RECEIVED TONS (input)	RECEIVED Mg (calc)	USED TONS (input)	USED Mg (calc)	PRODUCED TONS (input)	PRODUCED Mg (calc)	SHIPPED TONS (input)	SHIPPED Mg (calc)
1	COAL	61728	56000	61382	55686				
2	CLAY+ERI	17113	15525	17905	16243				
	IRON	14942	13555	15144	13739				
	SILICA	61500	55793	67799	61507				
	LIMESTONE	678005	615086	670305	608101				
	GYPSUM	28424	25786	30133	27337				
	FLYASH	0	0	0	0				
	BOTTOM ASH	76882	69747	75302	68314				
3	KILN FEED			816762	740966	818925	742929		
	SORBENT	2229	2022	2172	1970				
4	CLINKER	0	0	545952	495288	556004	504407	0	0
5	CEMENT	0	0			586137	531743	584172	529961
FM#2	FLYASH-1PM	0		0	0	0	0		

		Tons			
point 002	Total RM	801286	cl prod.	504407	8760
point 003	Total KF	818934	cl/hr	85.0954	
point 004	Total CK	556004	emis rate kg/hr	1.13	
point 005	Total CM	586137	kg/Mg clinker	0.01328	

		PM10	PM2.5	lbs.2.5
KN	1	46037	0.077 lbs per ton clinker	42812
	1	2489	0.6 x coal pm10	1494
RM	2	3811	0.6 x RM pm10	2286
KF	3	1908	0.6 per ton KF	1145
CK	4	5053	0.6 per ton clinker	3032
CM	5	18997	0.6 per ton cement	11398

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ASH GROVE CEMENT - WESTERN REGION
SEATTLE PLANT

12/31/03

	RECEIVED / PRODUCED			USED / SHIPPED			
	DAY	MONTH	YEAR	DAY	MONTH	YEAR	INVENTORY
RAW MATERIALS							
LIMESTONE		40,699	671,201	2,371	46,963	663,501	21,639
LIME FINES		481	6,804	(75)	481	6,804	0
BOTTOM ASH		4,712	76,882	(640)	4,790	75,302	1,874
CASTLE ROCK CLAY		0	13,468	117	0	14,335	0
ERI (RECYCLED)		1,545	3,645	#REF!	1,520	3,570	75
SUPERIOR SILICA		0	61,500	(879)	5,692	67,799	0
COMINCO SLAG		293	14,160	389	441	14,382	385
HECKET SLAG		0	0	#REF!	0	9	0
KLEEN BLAST SLAG		0	782	0	0	782	0
HYDRATED LIME		318	2,229	748	274	2,172	56
RAW MATERIAL SALES							
3/4" LIMESTONE SALES		23,824	235,213	0	23,195	236,495	6,617
SILICA (STEILACOOM)		0	0	0	0	6,069	0
KILN FEED							
TYPE I/II	1,959	58,055	818,925	7,863	54,533	816,762	9,410
FUELS (TONS)							
GAS (Tons)				#REF!	68	1,866	
COAL (Tons)	0	0	61,728	#REF!	4,776	61,382	4,790
TDF (Tons)				543	970	10,651	0
TDF Weight Percent				#REF!	16.7%	14.4%	
FUELS (NET HEAT VALS)	Fuel Usage Rate			Fuel Usage (MMBTU)			
GAS (MMBTU Net)	#REF!	2.3%	4.8%	#REF!	2,975	81,752	
COAL (MMBTU Net)	#REF!	78.0%	78.4%	17,125	103,255	1,327,061	
TDF (MMBTU Net)	#REF!	19.7%	16.7%	0	26,078	283,259	
TOTAL (MMBTU Net)				#REF!	132,308	1,692,071	
MMBTU/Ton				3.04	3.17	3.10	
CLINKER							
PRODUCTION	5,630	41,791	545,552	#REF!	36,545	556,004	28,119
SALES / RECEIVALS	0	0	0	0	0	0	
CEMENT ADDITIVES							
GYPSUM	0	5,757	28,424	#REF!	1,736	30,133	6,001
GRINDING AID (Lbs)	0	0	272,500	84	25,427	314,657	3,577
CEMENT							
TYPE I	3,265	34,074	532,147	435	19,364	284,124	73,042
TYPE II	0	0	0	0	3,506	125,969	0
TYPE I-II	0	0	0	228	11,856	118,955	0
TYPE III	(647)	4,208	33,224	69	2,484	32,685	4,066
TYPE CG	287	0	20,766	0	0	22,441	2,387
TOTAL PRODUCED	2,905	38,282	586,137	733	37,210	584,172	
TOTAL RECEIVED	0	0	0	0	0	0	
GRAND TOTAL	2,905	38,282	586,137	733	37,210	584,172	79,496

DAYS SINCE LAST L.T. I. ***300***

	RUN TIME			PRODUCTION RATE			REASON FOR DOWNTIME
EQUIPMENT DATA	DAY	MONTH	YEAR	DAY	MONTH	YEAR	
RAW MILL (TPH)	#REF!	382.5	4665.6	389.1	151.8	175.5	
KILN (TPD)	#REF!	451.3	5778.5	5630.2	2222.5	2267.5	
% RUN TIME	#REF!	60.7%	66.0%				
#1 FINISH MILL (TPH)	1711.5	300.8	5831.0	#REF!	57.5	54.4	
% RUN TIME	7131.4%	40.4%	66.6%				
#2 FINISH MILL (TPH)	1193.9	468.6	5577.2	#REF!	44.8	48.2	
% RUN TIME	4974.6%	63.0%	63.7%				

	TONS			LBS/TON OF CLINKER			YEAR LIMIT		CLINK PROD	% OF YEAR
ENVIRONMENTAL DATA	DAY	MONTH	YEAR	DAY	MONTH	YEAR	TONS	% OF LIMIT	% OF BUDG.	PASSED
SO2	1.20	15.99	137.2	0.43	0.77	0.50	176.0	77.97%	87.70%	100.00%
NOX	2.48	58.92	969.4	0.88	2.82	3.55	1,846.0	52.51%		
CO	4.52	91.45	1,124.2	1.61	4.38	4.12	2,353.0	47.78%		

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	total
LS	670,305
clay	17,905
slag	15,153