Appendix B

Fine Particulate Speciation Summary- 2007

New Jersey Department of Environmental Protection

Table 1
Fine Particulate Speciation Data – 2007
Camden Lab, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu g/m^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0586	0.3956	0.2132
Ammonium	1.7790	7.1443	5.5473
Antimony	0.0009	0.0303	0.0210
Arsenic	0.0008	0.0049	0.0045
Barium	0.0002	0.0047	0.0046
Bromine	0.0029	0.0153	0.0071
Cadmium	0.0003	0.0050	0.0048
Calcium	0.0722	0.2465	0.1960
Cerium	0.0001	0.0065	0.0001
Cesium	0.0015	0.0456	0.0408
Chlorine	0.0549	0.5224	0.4773
Chromium	0.0037	0.0433	0.0407
Cobalt	0.0003	0.0016	0.0015
Copper	0.0087	0.1395	0.1193
Elemental carbon *	0.5955	2.1657	1.4505
Europium	0.0002	0.0070	0.0046
Gallium	0.0002	0.0028	0.0022
Gold	0.0002	0.0044	0.0042
Hafnium	0.0000	0.0005	0.0000
Indium	0.0010	0.0140	0.0124
Iridium	0.0004	0.0073	0.0041
Iron	0.1409	0.4062	0.3746
Lanthanum	0.0001	0.0140	0.0000
Lead	0.0024	0.0093	0.0084
Magnesium	0.0045	0.0872	0.0541
Manganese	0.0018	0.0088	0.0074
Mercury	0.0006	0.0134	0.0086
Molybdenum	0.0001	0.0024	0.0020
Nickel	0.0034	0.0186	0.0135
Niobium	0.0004	0.0060	0.0050
Nitrate	1.6833	7.2852	6.5957

Table 1 (continued)
Fine Particulate Speciation Data – 2007
Camden Lab, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu g/m^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Organic carbon *	3.3316	7.6473	6.6981
Phosphorus	0.0000	0.0000	0.0000
Potassium	0.0603	0.2868	0.1226
Rubidium	0.0003	0.0019	0.0018
Samarium	0.0002	0.0051	0.0038
Scandium	0.0000	0.0008	0.0002
Selenium	0.0011	0.0124	0.0091
Silicon	0.1525	0.6120	0.4458
Silver	0.0006	0.0106	0.0095
Sodium	0.1177	0.4768	0.3413
Strontium	0.0006	0.0117	0.0079
Sulfate	3.7818	16.3437	13.5597
Sulfur	1.2248	4.4152	4.4128
Tantalum	0.0003	0.0089	0.0055
Terbium	0.0004	0.0069	0.0050
Tin	0.0011	0.0199	0.0187
Titanium	0.0057	0.0337	0.0245
Total mass	15.4297	34.6570	33.0928
Vanadium	0.0058	0.0218	0.0183
Wolfram	0.0004	0.0055	0.0052
Yttrium	0.0000	0.0015	0.0009
Zinc	0.0136	0.0939	0.0552
Zirconium	0.0006	0.0141	0.0116

* Collection and sampling method changed on 7/8/07.

Table 2
Fine Particulate Speciation Data – 2007
Chester, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu g/m^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0154	0.1138	0.1099
Ammonium	1.3362	5.6294	4.6735
Antimony	0.0012	0.0362	0.0198
Arsenic	0.0006	0.0037	0.0032
Barium	0.0004	0.0112	0.0055
Bromine	0.0020	0.0082	0.0080
Cadmium	0.0009	0.0156	0.0118
Calcium	0.0110	0.0461	0.0351
Cerium	0.0001	0.0072	0.0000
Cesium	0.0014	0.0654	0.0478
Chlorine	0.0134	0.2389	0.1205
Chromium	0.0044	0.1900	0.0615
Cobalt	0.0002	0.0013	0.0012
Copper	0.0021	0.0197	0.0080
Elemental carbon	0.3440	1.0976	1.0095
Europium	0.0003	0.0076	0.0042
Gallium	0.0002	0.0028	0.0025
Gold	0.0003	0.0043	0.0043
Hafnium	0.0000	0.0000	0.0000
Indium	0.0006	0.0117	0.0116
Iridium	0.0003	0.0075	0.0055
Iron	0.0409	0.6115	0.2135
Lanthanum	0.0004	0.0163	0.0093
Lead	0.0013	0.0117	0.0089
Magnesium	0.0013	0.0216	0.0175
Manganese	0.0005	0.0047	0.0038
Mercury	0.0004	0.0093	0.0071
Molybdenum	0.0001	0.0045	0.0023
Nickel	0.0022	0.0624	0.0198
Niobium	0.0002	0.0049	0.0040
Nitrate	1.0025	5.7544	3.4571
Organic carbon	2.8275	11.1357	8.6984
Phosphorus	0.0000	0.0002	0.0000
Potassium	0.0329	0.1756	0.1445
Rubidium	0.0004	0.0023	0.0020
Samarium	0.0004	0.0070	0.0049
Scandium	0.0002	0.0097	0.0044
Selenium	0.0006	0.0036	0.0036

Table 2 (Continued)
Fine Particulate Speciation Data – 2007
Chester, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu g/m^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Silicon	0.0276	0.1223	0.1174
Silver	0.0012	0.0194	0.0176
Sodium	0.0599	0.4999	0.2163
Strontium	0.0002	0.0051	0.0031
Sulfate	3.3468	15.4640	13.7984
Sulfur	1.0579	5.5882	4.1645
Tantalum	0.0001	0.0059	0.0058
Terbium	0.0002	0.0032	0.0026
Tin	0.0019	0.0432	0.0327
Titanium	0.0010	0.0074	0.0072
Total mass	10.4369	35.8985	33.0067
Vanadium	0.0011	0.0052	0.0050
Wolfram	0.0006	0.0088	0.0086
Yttrium	0.0001	0.0023	0.0016
Zinc	0.0060	0.0215	0.0205
Zirconium	0.0003	0.0117	0.0072

Table 3
Fine Particulate Speciation Data – 2007
Elizabeth Lab, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu g/m^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0327	0.1815	0.1710
Ammonium	2.0063	7.1583	6.8931
Antimony	0.0005	0.0094	0.0087
Arsenic	0.0007	0.0038	0.0035
Barium	0.0012	0.0267	0.0186
Bromine	0.0034	0.0116	0.0113
Cadmium	0.0004	0.0107	0.0054
Calcium	0.0302	0.0742	0.0724
Cerium	0.0001	0.0094	0.0040
Cesium	0.0014	0.0989	0.0097
Chlorine	0.0383	0.3208	0.3091
Chromium	0.0049	0.0920	0.0324
Cobalt	0.0003	0.0023	0.0019
Copper	0.0071	0.0297	0.0217
Elemental carbon	1.7634	6.2998	5.0350
Europium	0.0001	0.0055	0.0051
Gallium	0.0002	0.0041	0.0030
Gold	0.0002	0.0062	0.0041
Hafnium	0.0002	0.0076	0.0047
Indium	0.0006	0.0186	0.0128
Iridium	0.0004	0.0095	0.0050
Iron	0.1285	0.3567	0.3448
Lanthanum	0.0002	0.0093	0.0041
Lead	0.0021	0.0238	0.0122
Magnesium	0.0041	0.0465	0.0363
Manganese	0.0019	0.0112	0.0085
Mercury	0.0005	0.0077	0.0052
Molybdenum	0.0002	0.0058	0.0044
Nickel	0.0047	0.0235	0.0167
Niobium	0.0003	0.0051	0.0042
Nitrate	1.9419	7.4407	6.2825
Organic carbon	4.7256	12.4947	9.6217
Phosphorus	0.0001	0.0056	0.0013
Potassium	0.0432	0.2334	0.2302
Rubidium	0.0003	0.0030	0.0019
Samarium	0.0002	0.0066	0.0052
Scandium	0.0000	0.0016	0.0015
Selenium	0.0007	0.0042	0.0033

Table 3 (Continued)
Fine Particulate Speciation Data – 2007
Elizabeth Lab, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu g/m^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Silicon	0.0626	0.1576	0.1487
Silver	0.0008	0.0206	0.0072
Sodium	0.1086	0.5492	0.5250
Strontium	0.0006	0.0087	0.0069
Sulfate	4.0237	15.8514	14.5983
Sulfur	1.3009	4.8133	4.6312
Tantalum	0.0002	0.0070	0.0051
Terbium	0.0002	0.0050	0.0041
Tin	0.0010	0.0209	0.0149
Titanium	0.0028	0.0111	0.0108
Total mass	17.4337	66.0970	40.4737
Vanadium	0.0063	0.0422	0.0363
Wolfram	0.0003	0.0099	0.0041
Yttrium	0.0001	0.0029	0.0020
Zinc	0.0140	0.0460	0.0418
Zirconium	0.0006	0.0081	0.0050

Table 4
Fine Particulate Speciation Data – 2007
New Brunswick, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu g/m^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0340	0.2355	0.2040
Ammonium	1.5617	6.1065	4.4529
Antimony	0.0008	0.0248	0.0163
Arsenic	0.0006	0.0035	0.0029
Barium	0.0004	0.0112	0.0070
Bromine	0.0025	0.0152	0.0078
Cadmium	0.0008	0.0186	0.0136
Calcium	0.0254	0.1232	0.0839
Cerium	0.0001	0.0075	0.0048
Cesium	0.0005	0.0245	0.0083
Chlorine	0.0229	0.2545	0.1091
Chromium	0.0092	0.2431	0.1039
Cobalt	0.0002	0.0015	0.0013
Copper	0.0061	0.0281	0.0274
Elemental carbon	0.6711	3.5840	2.2309
Europium	0.0001	0.0057	0.0054
Gallium	0.0004	0.0047	0.0040
Gold	0.0003	0.0054	0.0051
Hafnium	0.0001	0.0026	0.0012
Indium	0.0010	0.0161	0.0140
Iridium	0.0005	0.0077	0.0069
Iron	0.1022	0.8649	0.3468
Lanthanum	0.0001	0.0016	0.0015
Lead	0.0015	0.0113	0.0089
Magnesium	0.0024	0.0454	0.0284
Manganese	0.0016	0.0105	0.0058
Mercury	0.0008	0.0092	0.0087
Molybdenum	0.0002	0.0062	0.0040
Nickel	0.0040	0.0626	0.0271
Niobium	0.0003	0.0082	0.0049
Nitrate	1.3698	6.1923	5.5339
Organic carbon	3.2302	8.0194	7.6704
Phosphorus	0.0001	0.0070	0.0029
Potassium	0.0447	0.3432	0.1905
Rubidium	0.0004	0.0024	0.0020
Samarium	0.0004	0.0109	0.0071
Scandium	0.0001	0.0079	0.0015
Selenium	0.0007	0.0047	0.0041

Table 4 (Continued)
Fine Particulate Speciation Data – 2007
New Brunswick, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu g/m^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Silicon	0.0603	0.3405	0.2864
Silver	0.0007	0.0116	0.0107
Sodium	0.0988	0.7184	0.4083
Strontium	0.0007	0.0111	0.0079
Sulfate	3.6291	15.6331	14.3960
Sulfur	1.1613	4.7804	4.5473
Tantalum	0.0002	0.0081	0.0047
Terbium	0.0003	0.0047	0.0047
Tin	0.0013	0.0299	0.0198
Titanium	0.0031	0.0188	0.0166
Total mass	13.2779	36.1048	34.8921
Vanadium	0.0019	0.0119	0.0073
Wolfram	0.0006	0.0077	0.0065
Yttrium	0.0001	0.0027	0.0022
Zinc	0.0101	0.0833	0.0360
Zirconium	0.0006	0.0093	0.0091