Appendix B

Fine Particulate Speciation Summary- 2006

New Jersey Department of Environmental Protection

Table 1
Fine Particulate Speciation Data – 2006
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	0.0717	0.5320	0.4127
Ammonium	1.4736	4.5909	4.0725
Antimony	0.0020	0.0431	0.0268
Arsenic	0.0009	0.0034	0.0029
Barium	0.0072	0.3303	0.0176
Bromine	0.0029	0.0087	0.0079
Cadmium	0.0015	0.0142	0.0141
Calcium	0.0733	0.3354	0.2990
Cerium	0.0015	0.0647	0.0070
Cesium	0.0000	0.0007	0.0006
Chlorine	0.0272	0.3246	0.2456
Chromium	0.0056	0.0684	0.0262
Cobalt	0.0001	0.0013	0.0011
Copper	0.0066	0.0208	0.0192
Elemental carbon	0.6563	3.2603	1.3928
Europium	0.0000	0.0000	0.0000
Gallium	0.0005	0.0033	0.0027
Gold	0.0003	0.0029	0.0023
Hafnium	0.0001	0.0021	0.0012
Indium	0.0015	0.0212	0.0186
Iridium	0.0006	0.0058	0.0036
Iron	0.1606	0.9613	0.5927
Lanthanum	0.0004	0.0082	0.0076
Lead	0.0035	0.0111	0.0095
Magnesium	0.0103	0.0716	0.0625
Manganese	0.0023	0.0099	0.0075
Mercury	0.0009	0.0062	0.0058
Molybdenum	0.0001	0.0036	0.0000
Nickel	0.0038	0.0225	0.0154
Niobium	0.0006	0.0043	0.0040
Nitrate	1.1704	6.8156	3.9037

Table 1 (Continued)
Fine Particulate Speciation Data – 2006
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	3.8258	8.8649	6.8875
Phosphorus	0.0010	0.0325	0.0149
Potassium	0.0667	0.2910	0.2574
Rubidium	0.0004	0.0032	0.0025
Samarium	0.0007	0.0126	0.0052
Scandium	0.0001	0.0034	0.0000
Selenium	0.0011	0.0046	0.0043
Silicon	0.1633	1.2798	0.8556
Silver	0.0026	0.0178	0.0148
Sodium	0.1290	0.8686	0.5073
Strontium	0.0013	0.0056	0.0051
Sulfate	3.6277	13.0286	10.1109
Sulfur	1.2993	5.5455	3.6107
Tantalum	0.0004	0.0124	0.0022
Terbium	0.0000	0.0010	0.0000
Tin	0.0022	0.0230	0.0124
Titanium	0.0038	0.0477	0.0267
Total mass	14.6915	45.4592	44.4743
Vanadium	0.0085	0.0611	0.0442
Wolfram	0.0013	0.0103	0.0078
Yttrium	0.0005	0.0041	0.0021
Zinc	0.0123	0.0378	0.0308
Zirconium	0.0024	0.0298	0.0115

Table 2
Fine Particulate Speciation Data – 2006
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	0.0167	0.0759	0.0619
Ammonium	1.0110	3.7009	3.1374
Antimony	0.0031	0.0315	0.0291
Arsenic	0.0009	0.0035	0.0034
Barium	0.0007	0.0151	0.0078
Bromine	0.0019	0.0108	0.0041
Cadmium	0.0017	0.0254	0.0202
Calcium	0.0117	0.0642	0.0446
Cerium	0.0000	0.0002	0.0000
Cesium	0.0002	0.0079	0.0029
Chlorine	0.0026	0.0431	0.0294
Chromium	0.0056	0.0895	0.0635
Cobalt	0.0001	0.0010	0.0008
Copper	0.0017	0.0126	0.0112
Elemental carbon	0.3187	1.4590	1.0928
Europium	0.0003	0.0042	0.0040
Gallium	0.0005	0.0027	0.0022
Gold	0.0006	0.0040	0.0033
Hafnium	0.0000	0.0000	0.0000
Indium	0.0017	0.0210	0.0181
Iridium	0.0003	0.0040	0.0023
Iron	0.0445	0.2798	0.2651
Lanthanum	0.0003	0.0055	0.0051
Lead	0.0021	0.0099	0.0079
Magnesium	0.0082	0.0859	0.0825
Manganese	0.0011	0.0041	0.0037
Mercury	0.0007	0.0102	0.0045
Molybdenum	0.0002	0.0052	0.0040
Nickel	0.0024	0.0235	0.0227
Niobium	0.0006	0.0054	0.0049
Nitrate	0.6715	3.5438	3.1741
Organic carbon	2.7419	8.0902	5.8824
Phosphorus	0.0004	0.0069	0.0056
Potassium	0.0294	0.1022	0.0923
Rubidium	0.0003	0.0020	0.0015
Samarium	0.0004	0.0058	0.0035
Scandium	0.0000	0.0000	0.0000
Selenium	0.0010	0.0057	0.0040

Table 2 (Continued)
Fine Particulate Speciation Data – 2006
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	0.0322	0.3759	0.1916
Silver	0.0014	0.0136	0.0077
Sodium	0.0694	0.3347	0.2497
Strontium	0.0009	0.0118	0.0023
Sulfate	2.8660	12.9839	9.8457
Sulfur	0.9734	4.1826	3.2608
Tantalum	0.0004	0.0078	0.0048
Terbium	0.0000	0.0019	0.0000
Tin	0.0019	0.0309	0.0182
Titanium	0.0006	0.0085	0.0058
Total mass	9.8670	30.3970	25.0541
Vanadium	0.0012	0.0059	0.0051
Wolfram	0.0005	0.0051	0.0049
Yttrium	0.0006	0.0035	0.0032
Zinc	0.0065	0.0191	0.0160
Zirconium	0.0009	0.0200	0.0045

Table 3
Fine Particulate Speciation Data – 2006
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	0.0377	0.3314	0.2117
Ammonium	1.4764	5.3743	4.5026
Antimony	0.0010	0.0174	0.0163
Arsenic	0.0008	0.0037	0.0030
Barium	0.0012	0.0123	0.0115
Bromine	0.0032	0.0146	0.0114
Cadmium	0.0019	0.0162	0.0127
Calcium	0.0305	0.1050	0.0785
Cerium	0.0001	0.0027	0.0007
Cesium	0.0000	0.0006	0.0001
Chlorine	0.0216	0.2839	0.2041
Chromium	0.0056	0.0275	0.0266
Cobalt	0.0001	0.0012	0.0011
Copper	0.0089	0.1428	0.0204
Elemental carbon	1.6362	5.5110	3.5755
Europium	0.0001	0.0038	0.0035
Gallium	0.0006	0.0029	0.0025
Gold	0.0005	0.0036	0.0031
Hafnium	0.0001	0.0036	0.0002
Indium	0.0016	0.0221	0.0176
Iridium	0.0005	0.0040	0.0040
Iron	0.1365	0.4282	0.3020
Lanthanum	0.0000	0.0007	0.0000
Lead	0.0039	0.0234	0.0187
Magnesium	0.0103	0.1034	0.0871
Manganese	0.0022	0.0061	0.0050
Mercury	0.0005	0.0081	0.0042
Molybdenum	0.0000	0.0018	0.0000
Nickel	0.0048	0.0191	0.0141
Niobium	0.0005	0.0070	0.0052
Nitrate	1.2121	5.9872	4.5715
Organic carbon	4.4170	11.6643	8.6050
Phosphorus	0.0015	0.0412	0.0182
Potassium	0.0422	0.2106	0.1671
Rubidium	0.0005	0.0033	0.0020
Samarium	0.0003	0.0049	0.0036
Scandium	0.0000	0.0000	0.0000
Selenium	0.0009	0.0037	0.0035

Table 3 (Continued)
Fine Particulate Speciation Data – 2006
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	0.0623	0.6491	0.2798
Silver	0.0010	0.0105	0.0088
Sodium	0.1118	0.5156	0.4239
Strontium	0.0019	0.0254	0.0168
Sulfate	3.4157	15.1530	10.4869
Sulfur	1.1633	4.8626	3.6647
Tantalum	0.0001	0.0043	0.0020
Terbium	0.0000	0.0000	0.0000
Tin	0.0055	0.0756	0.0349
Titanium	0.0017	0.0192	0.0116
Total mass	14.0938	42.3493	36.8464
Vanadium	0.0071	0.0581	0.0423
Wolfram	0.0014	0.0112	0.0111
Yttrium	0.0005	0.0041	0.0038
Zinc	0.0134	0.0597	0.0315
Zirconium	0.0015	0.0126	0.0119

Table 4
Fine Particulate Speciation Data – 2006
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	0.0290	0.1947	0.1840
Ammonium	1.2296	4.7168	4.1810
Antimony	0.0029	0.0397	0.0222
Arsenic	0.0006	0.0036	0.0025
Barium	0.0014	0.0166	0.0117
Bromine	0.0026	0.0150	0.0070
Cadmium	0.0004	0.0118	0.0058
Calcium	0.0146	0.0546	0.0536
Cerium	0.0001	0.0052	0.0027
Cesium	0.0000	0.0009	0.0000
Chlorine	0.0223	0.3173	0.2722
Chromium	0.0073	0.0891	0.0474
Cobalt	0.0001	0.0014	0.0012
Copper	0.0045	0.0199	0.0137
Elemental carbon	0.5945	2.2229	1.9354
Europium	0.0001	0.0025	0.0020
Gallium	0.0004	0.0021	0.0021
Gold	0.0004	0.0036	0.0028
Hafnium	0.0000	0.0011	0.0000
Indium	0.0013	0.0233	0.0189
Iridium	0.0007	0.0069	0.0058
Iron	0.0789	0.2774	0.2113
Lanthanum	0.0005	0.0072	0.0058
Lead	0.0034	0.0131	0.0126
Magnesium	0.0052	0.0539	0.0379
Manganese	0.0024	0.0155	0.0099
Mercury	0.0007	0.0072	0.0064
Molybdenum	0.0001	0.0031	0.0000
Nickel	0.0030	0.0260	0.0149
Niobium	0.0004	0.0058	0.0029
Nitrate	0.8371	5.4820	3.5748
Organic carbon	3.3441	6.6110	6.2375
Phosphorus	0.0009	0.0366	0.0078
Potassium	0.0370	0.1232	0.1167
Rubidium	0.0004	0.0021	0.0020
Samarium	0.0009	0.0073	0.0048
Scandium	0.0001	0.0022	0.0006
Selenium	0.0008	0.0039	0.0027

Table 4 (Continued)
Fine Particulate Speciation Data – 2006
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	0.0342	0.3278	0.1089
Silver	0.0013	0.0143	0.0085
Sodium	0.1028	0.5487	0.4999
Strontium	0.0008	0.0035	0.0033
Sulfate	3.2444	15.5319	10.5496
Sulfur	1.0946	5.1777	3.8168
Tantalum	0.0005	0.0094	0.0054
Terbium	0.0000	0.0000	0.0000
Tin	0.0027	0.0376	0.0268
Titanium	0.0020	0.0399	0.0134
Total mass	11.7387	33.3919	33.2301
Vanadium	0.0019	0.0138	0.0071
Wolfram	0.0007	0.0082	0.0043
Yttrium	0.0006	0.0031	0.0028
Zinc	0.0107	0.0436	0.0371
Zirconium	0.0012	0.0125	0.0120