Appendix B

Fine Particulate Speciation Summary- 2002

New Jersey Department of Environmental Protection

Table 1
Fine Particulate Speciation Data – 2002
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	0.0196	0.4404	0.1571
Ammonium	2.0624	12.1231	6.5005
Antimony	0.0053	0.0522	0.0406
Arsenic	0.0009	0.0054	0.0048
Barium	0.0259	0.0921	0.0851
Bromine	0.0059	0.0757	0.0444
Cadmium	0.0025	0.0149	0.0136
Calcium	0.0368	0.1441	0.1261
Carbonate carbon	0	0	0
Cerium	0.0139	0.1175	0.0921
Cesium	0.0046	0.0416	0.0228
Chlorine	0.0211	1.1224	0.1619
Chromium	0.0026	0.0539	0.0127
Cobalt	0.0002	0.0017	0.0015
Copper	0.0045	0.0290	0.0225
Elemental carbon	0.7309	2.7319	2.4730
Europium	0.0017	0.0232	0.0203
Gallium	0.0003	0.0028	0.002
Gold	0.0019	0.0117	0.0088
Hafnium	0.0025	0.0252	0.0238
Indium	0.0024	0.0204	0.0151
Iridium	0.0017	0.0122	0.0108
Iron	0.0789	0.3581	0.348
Lanthanum	0.0102	0.0756	0.0643
Lead	0.0047	0.0376	0.0216
Magnesium	0.0055	0.1849	0.0591
Manganese	0.0023	0.0072	0.0071
Mercury	0.0013	0.0084	0.0083
Molybdenum	0.0015	0.0112	0.0071
Nickel	0.0036	0.0150	0.0141
Niobium	0.0008	0.0058	0.0042
Nitrate	2.1706	9.3186	8.9148

Table 1 (Continued)
Fine Particulate Speciation Data – 2002
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	5.0663	49.3815	15.1399
Fine particles	16.0389	95.4053	60.5842
Phosphorus	0.0021	0.0218	0.0161
Potassium	0.0613	0.6379	0.6198
Rubidium	0.0004	0.0028	0.0022
Samarium	0.0008	0.0102	0.0091
Scandium	0.0002	0.0033	0.0021
Selenium	0.0014	0.0057	0.0055
Silicon	0.0931	0.9520	0.4935
Silver	0.0032	0.0153	0.0122
Sodium	0.2045	1.0147	0.9575
Strontium	0.0011	0.0062	0.0043
Sulfate	4.6120	31.5102	17.0436
Sulfur	1.5287	9.3711	5.6812
Tantalum	0.0108	0.0563	0.0492
Terbium	0.0004	0.0088	0.0070
Tin	0.0101	0.0332	0.0291
Titanium	0.0054	0.052	0.0157
Total carbon	5.7972	50.5618	17.8718
Vanadium	0.0062	0.0430	0.0415
Wolfram	0.0040	0.0210	0.0174
Yttrium	0.0004	0.0043	0.0042
Zinc	0.0117	0.0885	0.0429
Zirconium	0.0010	0.0296	0.0054

Table 2
Fine Particulate Speciation Data – 2002
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	0.0062	0.0829	0.0404
Ammonium	1.5234	6.0980	5.7628
Antimony	0.0071	0.0584	0.0486
Arsenic	0.0010	0.0044	0.0044
Barium	0.0215	0.0873	0.0871
Bromine	0.0029	0.0109	0.0083
Cadmium	0.0030	0.0174	0.0156
Calcium	0.0215	0.0622	0.0543
Carbonate carbon	0	0	0
Cerium	0.0147	0.1280	0.0943
Cesium	0.0045	0.0334	0.0295
Chlorine	0.0056	0.1425	0.0405
Chromium	0.0013	0.0049	0.0043
Cobalt	0.0002	0.0018	0.0012
Copper	0.0049	0.0343	0.0290
Elemental carbon	0.4156	1.0402	0.8696
Europium	0.0007	0.0105	0.0079
Gallium	0.0001	0.0014	0.0014
Gold	0.0012	0.0078	0.0065
Hafnium	0.0034	0.0361	0.0331
Indium	0.0026	0.0127	0.0111
Iridium	0.0013	0.0062	0.0061
Iron	0.0364	0.1043	0.1017
Lanthanum	0.0050	0.0497	0.0487
Lead	0.0027	0.0109	0.0092
Magnesium	0.0046	0.0414	0.0404
Manganese	0.0018	0.0061	0.0050
Mercury	0.0010	0.0050	0.0043
Molybdenum	0.0020	0.0122	0.0119
Nickel	0.0017	0.0116	0.0066
Niobium	0.0006	0.0036	0.0035
Nitrate	1.4652	8.4899	5.8452
Organic carbon	3.8477	42.4958	9.9323
Fine particles	10.3317	31.3502	27.6232
Phosphorus	0.0039	0.1282	0.0201
Potassium	0.0387	0.1271	0.1035
Rubidium	0.0004	0.0047	0.0024
Samarium	0.0006	0.0075	0.0049
Scandium	0.0003	0.0037	0.0028
Selenium	0.0013	0.0058	0.0057

Table 2 (Continued)
Fine Particulate Speciation Data – 2002
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	0.0623	0.1827	0.1518
Silver	0.0034	0.0143	0.0111
Sodium	0.1893	0.7246	0.6859
Strontium	0.0007	0.0032	0.0031
Sulfate	4.0093	21.3841	17.8274
Sulfur	1.086	4.9835	3.4005
Tantalum	0.0095	0.051	0.0408
Terbium	0.0003	0.0044	0.0027
Tin	0.0099	0.0381	0.0292
Titanium	0.0041	0.0153	0.0143
Total carbon	4.2633	43.233	10.3099
Vanadium	0.002	0.0137	0.0111
Wolfram	0.0034	0.0226	0.0183
Yttrium	0.0006	0.0049	0.0028
Zinc	0.0078	0.0439	0.0271
Zirconium	0.0008	0.0059	0.0037

Table 3
Fine Particulate Speciation Data – 2002
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	0.0277	0.5468	0.4555
Ammonium	2.0910	7.5756	7.1794
Antimony	0.0055	0.0627	0.0356
Arsenic	0.0011	0.0051	0.0033
Barium	0.0348	0.0943	0.0923
Bromine	0.0037	0.0172	0.0127
Cadmium	0.0028	0.0261	0.0207
Calcium	0.0435	0.1575	0.1323
Carbonate carbon	0	0	0
Cerium	0.0109	0.1163	0.1088
Cesium	0.0045	0.0365	0.0274
Chlorine	0.0465	0.5961	0.5694
Chromium	0.0033	0.0399	0.0318
Cobalt	0.0003	0.0028	0.0026
Copper	0.0071	0.0269	0.0181
Elemental carbon	1.8226	4.6514	4.0180
Europium	0.0024	0.0206	0.020
Gallium	0.0001	0.0015	0.0012
Gold	0.0020	0.0087	0.0084
Hafnium	0.0033	0.0592	0.0403
Indium	0.0020	0.0256	0.0204
Iridium	0.0015	0.0078	0.0071
Iron	0.1267	0.3848	0.3038
Lanthanum	0.0081	0.0576	0.0462
Lead	0.0047	0.0149	0.0115
Magnesium	0.0095	0.1888	0.1646
Manganese	0.0031	0.0104	0.0097
Mercury	0.0012	0.0072	0.0059
Molybdenum	0.0015	0.0073	0.0069
Nickel	0.0048	0.0297	0.0261
Niobium	0.0006	0.0050	0.0043
Nitrate	2.1984	9.9004	8.4633
Organic carbon	6.0903	46.3731	12.4329
Fine particles	18.1842	85.7084	52.2080
Phosphorus	0.0036	0.0425	0.0269
Potassium	0.0610	0.6606	0.6325
Rubidium	0.0006	0.0029	0.0027
Samarium	0.0011	0.0094	0.0094
Scandium	0.0004	0.0035	0.0023
Selenium	0.0017	0.0097	0.0060

Table 3 (Continued)
Fine Particulate Speciation Data – 2002
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	0.1089	1.0478	0.4544
Silver	0.0027	0.0119	0.0106
Sodium	0.2311	0.9496	0.8883
Strontium	0.0013	0.0097	0.0057
Sulfate	4.3530	17.5274	15.8345
Sulfur	1.4142	5.6848	4.8980
Tantalum	0.0081	0.0387	0.0342
Terbium	0.0002	0.0037	0.0029
Tin	0.0093	0.0322	0.0277
Titanium	0.0079	0.0500	0.0234
Total carbon	7.9129	48.0773	15.7961
Vanadium	0.0076	0.0531	0.0439
Wolfram	0.0030	0.0205	0.0171
Yttrium	0.0006	0.0029	0.0028
Zinc	0.0176	0.0602	0.0510
Zirconium	0.0024	0.1116	0.0065

Table 4
Fine Particulate Speciation Data – 2002
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	0.0172	0.4631	0.2256
Ammonium	1.5808	7.5078	5.0059
Antimony	0.0071	0.0629	0.0586
Arsenic	0.0011	0.0061	0.0046
Barium	0.0306	0.0980	0.0952
Bromine	0.0032	0.0088	0.0087
Cadmium	0.0020	0.0158	0.0100
Calcium	0.0313	0.2295	0.1480
Carbonate carbon	0	0	0
Cerium	0.0163	0.0862	0.0832
Cesium	0.0071	0.0436	0.0365
Chlorine	0.0283	0.7643	0.3416
Chromium	0.0028	0.0500	0.0187
Cobalt	0.0003	0.0020	0.0020
Copper	0.0059	0.0230	0.0211
Elemental carbon	0.6533	2.0387	1.9532
Europium	0.0016	0.0360	0.0228
Gallium	0.0002	0.0029	0.0024
Gold	0.0018	0.0099	0.0093
Hafnium	0.0031	0.0329	0.0317
Indium	0.0021	0.0341	0.0262
Iridium	0.0017	0.0093	0.0078
Iron	0.0784	0.3913	0.3489
Lanthanum	0.0072	0.0736	0.0517
Lead	0.0079	0.1246	0.0404
Magnesium	0.0050	0.0789	0.0600
Manganese	0.0030	0.0254	0.0189
Mercury	0.0012	0.0061	0.0048
Molybdenum	0.0013	0.0090	0.0070
Nickel	0.0027	0.0189	0.0123
Niobium	0.0007	0.0049	0.0041
Nitrate	1.5915	6.8683	6.7106
Organic carbon	6.0903	46.3731	12.4329
Fine particles	18.1842	85.7084	52.2080
Phosphorus	0.0036	0.0425	0.0269
Potassium	0.0610	0.6606	0.6325
Rubidium	0.0006	0.0029	0.0027
Samarium	0.0011	0.0094	0.0094
Scandium	0.0003	0.0031	0.0019
Selenium	0.0012	0.0052	0.0051

Table 4 (Continued)
Fine Particulate Speciation Data – 2002
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	0.0819	0.9638	0.3797
Silver	0.0037	0.0143	0.0137
Sodium	0.2086	0.8049	0.7002
Strontium	0.0010	0.0060	0.0051
Sulfate	3.8291	20.3349	14.7554
Sulfur	1.1926	6.3135	4.4472
Tantalum	0.0108	0.0452	0.0450
Terbium	0.0002	0.0045	0.0018
Tin	0.0119	0.0701	0.0508
Titanium	0.0059	0.0433	0.0243
Total carbon	5.1764	47.2367	24.0681
Vanadium	0.0025	0.0083	0.0080
Wolfram	0.0035	0.0237	0.0179
Yttrium	0.0005	0.0030	0.0029
Zinc	0.0175	0.2033	0.1170
Zirconium	0.0009	0.0052	0.0052