



2011 Appendix B

Fine Particulate Speciation Summary- 2011

New Jersey Department of Environmental Protection

Table 1
Fine Particulate Speciation Data – 2011
Chester, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0250	0.3027	0.1910
Ammonium	0.6328	2.5831	2.3150
Antimony	0.0073	0.0665	0.0619
Arsenic	0.0003	0.0029	0.0024
Barium	0.0005	0.0099	0.0066
Bromine	0.0024	0.0075	0.0058
Cadmium	0.0023	0.0210	0.0190
Calcium	0.0141	0.0558	0.0518
Cerium	0.0001	0.0020	0.0015
Cesium	0.0009	0.0077	0.0072
Chlorine	0.0040	0.0399	0.0200
Chromium	0.0040	0.0671	0.0569
Cobalt	0.0004	0.0022	0.0022
Copper	0.0015	0.0086	0.0085
Elemental carbon	0.1662	0.4590	0.3674
Indium	0.0037	0.0241	0.0228
Iron	0.0369	0.2344	0.2302
Lead	0.0011	0.0063	0.0062
Magnesium	0.0013	0.0344	0.0207
Manganese	0.0007	0.0069	0.0031
Nickel	0.0014	0.0178	0.0170
Nitrate	0.7873	3.9740	3.7155
Organic carbon	1.6693	4.7371	3.9869
Phosphorus	0.0000	0.0013	0.0000
Potassium	0.0334	0.1652	0.1107
Rubidium	0.0002	0.0015	0.0013
Selenium	0.0004	0.0022	0.0021
Silicon	0.0264	0.1137	0.1100
Silver	0.0013	0.0162	0.0151
Sodium	0.0442	0.3167	0.1408
Strontium	0.0005	0.0114	0.0044
Sulfate	1.8805	6.8984	6.8757

Table 1 (Continued)
Fine Particulate Speciation Data – 2011
Chester, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Sulfur	0.6287	2.1593	2.0655
Tin	0.0043	0.0536	0.0535
Titanium	0.0009	0.0074	0.0061
Total mass	7.6126	17.9178	17.7411
Vanadium	0.0006	0.0058	0.0043
Zinc	0.0056	0.0976	0.0212
Zirconium	0.0008	0.0086	0.0084

Table 2
Fine Particulate Speciation Data – 2011
Elizabeth Lab, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0292	0.1662	0.1507
Ammonium	1.0461	3.8907	3.6136
Antimony	0.0076	0.0511	0.0442
Arsenic	0.0004	0.0050	0.0022
Barium	0.0027	0.0297	0.0204
Bromine	0.0032	0.0130	0.0076
Cadmium	0.0031	0.0314	0.0177
Calcium	0.0355	0.0943	0.0823
Cerium	0.0001	0.0037	0.0026
Cesium	0.0006	0.0078	0.0049
Chlorine	0.0395	1.5634	0.2614
Chromium	0.0023	0.0185	0.0165
Cobalt	0.0007	0.0033	0.0028
Copper	0.0057	0.0219	0.0219
Elemental carbon	1.2887	4.3665	3.9854
Indium	0.0034	0.0337	0.0256
Iron	0.1390	0.4776	0.3793
Lead	0.0017	0.0091	0.0085
Magnesium	0.0063	0.1166	0.1072
Manganese	0.0020	0.0086	0.0073
Nickel	0.0028	0.0131	0.0116
Nitrate	1.4739	7.3653	6.0702
Organic carbon	2.7921	8.1573	7.4468
Phosphorus	0.0001	0.0019	0.0016
Potassium	0.0443	0.3251	0.1201
Rubidium	0.0001	0.0015	0.0013
Selenium	0.0004	0.0022	0.0020
Silicon	0.0592	0.1927	0.1745
Silver	0.0016	0.0154	0.0154
Sodium	0.1067	1.2436	0.6778
Strontium	0.0006	0.0066	0.0060
Sulfate	2.3149	10.1286	6.4079

Table 2 (Continued)
Fine Particulate Speciation Data – 2011
Elizabeth Lab, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Sulfur	0.8320	3.3688	2.5617
Tin	0.0045	0.0512	0.0500
Titanium	0.0028	0.0147	0.0133
Total mass	12.9252	35.1997	32.2149
Vanadium	0.0057	0.0330	0.0312
Zinc	0.0121	0.0450	0.0384
Zirconium	0.0010	0.0151	0.0116

Table 3
Fine Particulate Speciation Data – 2011
New Brunswick, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0447	0.3718	0.2548
Ammonium	0.7216	3.4420	2.3490
Antimony	0.0066	0.0548	0.0501
Arsenic	0.0004	0.0037	0.0028
Barium	0.0009	0.0183	0.0105
Bromine	0.0027	0.0079	0.0069
Cadmium	0.0031	0.0291	0.0268
Calcium	0.0392	0.1859	0.1356
Cerium	0.0002	0.0026	0.0020
Cesium	0.0007	0.0111	0.0064
Chlorine	0.0398	0.7060	0.6398
Chromium	0.0053	0.0927	0.0778
Cobalt	0.0007	0.0038	0.0024
Copper	0.0047	0.0233	0.0207
Elemental carbon	0.3253	1.1620	0.8460
Indium	0.0018	0.0168	0.0152
Iron	0.1039	0.6505	0.3373
Lead	0.0019	0.0097	0.0082
Magnesium	0.0061	0.0986	0.0910
Manganese	0.0026	0.0193	0.0117
Nickel	0.0021	0.0236	0.0196
Nitrate	0.9783	6.1688	4.7120
Organic carbon	2.0609	7.0724	4.9515
Phosphorus	0.0000	0.0021	0.0008
Potassium	0.0490	0.2089	0.1690
Rubidium	0.0001	0.0014	0.0012
Selenium	0.0003	0.0021	0.0017
Silicon	0.0857	0.5599	0.3856
Silver	0.0014	0.0195	0.0170
Sodium	0.0928	1.3624	0.5920
Strontium	0.0005	0.0030	0.0029
Sulfate	2.0102	8.0132	6.6831

Table 3 (Continued)
Fine Particulate Speciation Data – 2011
New Brunswick, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Sulfur	0.7067	2.8559	2.4494
Tin	0.0024	0.0338	0.0256
Titanium	0.0035	0.0186	0.0184
Total mass	9.9860	26.1310	25.3896
Vanadium	0.0015	0.0170	0.0077
Zinc	0.0103	0.2408	0.0361
Zirconium	0.0004	0.0058	0.0054

Table 4
Fine Particulate Speciation Data – 2011
Newark, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0263	0.2175	0.2174
Ammonium	0.9091	3.1803	3.1163
Antimony	0.0070	0.0653	0.0650
Arsenic	0.0004	0.0028	0.0027
Barium	0.0010	0.0107	0.0094
Bromine	0.0029	0.0155	0.0103
Cadmium	0.0025	0.0210	0.0187
Calcium	0.0247	0.0755	0.0712
Cerium	0.0001	0.0029	0.0026
Cesium	0.0007	0.0067	0.0065
Chlorine	0.0270	1.2599	0.1431
Chromium	0.0058	0.2431	0.0923
Cobalt	0.0006	0.0025	0.0024
Copper	0.0054	0.0405	0.0322
Elemental carbon	0.9110	3.2020	2.8402
Indium	0.0030	0.0268	0.0240
Iron	0.0926	0.7717	0.6614
Lead	0.0021	0.0211	0.0118
Magnesium	0.0043	0.1145	0.0585
Manganese	0.0012	0.0144	0.0103
Nickel	0.0031	0.0614	0.0362
Nitrate	1.3541	7.1319	5.3260
Organic carbon	3.8841	9.8609	9.0996
Phosphorus	0.0002	0.0152	0.0000
Potassium	0.0417	0.3839	0.1244
Rubidium	0.0003	0.0019	0.0018
Selenium	0.0003	0.0023	0.0016
Silicon	0.0397	0.1359	0.1278
Silver	0.0012	0.0151	0.0116
Sodium	0.0858	0.9867	0.6007
Strontium	0.0007	0.0098	0.0055
Sulfate	2.0681	6.4411	5.8970

Table 4 (Continued)
Fine Particulate Speciation Data – 2011
Newark, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Sulfur	0.7253	2.3184	2.0187
Tin	0.0025	0.0222	0.0211
Titanium	0.0013	0.0125	0.0094
Total mass	10.1781	24.2794	22.9897
Vanadium	0.0031	0.0215	0.0191
Zinc	0.0117	0.0660	0.0623
Zirconium	0.0008	0.0084	0.0084