eAppendix

Association of exposure to fine particulate matter constituents and sources with birth weight

eTable 1. Information on monitoring locations for $PM_{2.5}$ filters

Note: For each day, a filter from a single monitoring site was used per location, for each of the five locations. The following table describes the 10 monitoring sites at the five locations. The percent of days provides the percent of days a monitor contributed to data for a given location. Location type and land-use categories are specified by U.S. EPA.

	County	Local Area	Location Type	Land-use	Percent of Days
New Haven, CT					
Primary monitor	New Haven	Stiles Street	Urban and center city	Industrial	98%
Supplemental monitor	New Haven	State Street	Urban and center city	Residential	2%
Hartford, CT					
Primary monitor	Hartford	McAuliffe Park	Suburban	Residential	97%
Supplemental monitor	Hartford	Shelton Street	Urban and center city	Commercial	3%
Bridgeport, CT					
Primary monitor	Fairfield	Roosevelt School	Urban and center city	Residential	97%
Supplemental monitor	Fairfield	Congress Street	Urban and center city	Commercial	3%
Danbury, CT					
Primary monitor	Fairfield	Western CT State University	Suburban	Residential	100%
Springfield, MA					
Primary monitor	Hampden	Liberty Street	Urban and center city	Commercial	79%
Supplemental monitor	Hampden	Anderson Road	Suburban	Commercial	20%
Supplemental monitor	Hampden	East Columbus Avenue	Suburban	Residential	1%

eTable 2: Largest and second largest constituent contribution to each source factor, by location

Note: The values shown are the percent of each source's $PM_{2.5}$ that is each chemical constituent. EC = Elemental Carbon, S = Sulfur, Cl = Chloride, Na = Sodium, Si = Silicon.

	Motor vehicle	Road dust	Oil combustion	Salt	Other regional sources
Hampden County, MA	EC (57.8%) S (26.2%)	S (31.4%) EC (23.8%)	S (47.2%) EC (37.6%)	Cl (49.5%) Na (28.1%)	S (77.9%) EC (12.5%)
Hartford County, CT	EC (59.8%) S (26.9%)	S (31.5%) Si (18.2%)	S (46.0%) EC (40.1%)	Cl (42.0%) Na (40.3%)	S (85.8%) EC (4.1%)
New Haven County, CT	EC (69.2%) S (19.9%)	EC (55.9%) S (11.9%)	EC (49.0%) S (37.5%)	Na (34.0%) Cl (31.6%)	S (67.5%) EC (22.6%)
Fairfield County, CT	EC (63.0%) S (23.8%)	EC (31.0%) S (28.2%)	EC (50.7%) S (35.0%)	Na (25.0%) S (24.4%)	S (78.7%) EC (11.6%)

eTable 3: Percent source contributions of $PM_{2.5}$ chemical constituents to source factors and $PM_{2.5}$ mass, averaged across counties

Note: The values shown are the percent of each constituent that contributes to each source or $PM_{2.5}$ mass. The sum of values for the source factors in each row sum to 100%. The final column shows the percent of $PM_{2.5}$ that was each chemical constituent. Bold font indicates the highest value for any row (i.e., the source with the highest contribution from that chemical constituent.

	Motor vehicle	Road dust	Oil combustion	Salt	Other regional sources	Percent of $PM_{2.5}$ mass
Zinc	**74.4**	6.2	13.0	0.7	5.8	0.12
Copper	**54.6**	20.8	7.6	1.5	15.5	0.03
Lead	**51.7**	12.6	12.8	1.6	21.4	0.03
Elemental carbon	**51.5**	16.6	16.5	0.4	15.0	7.44
Bromide	**41.6**	10.5	18.5	2.9	26.6	0.01
Potassium	**39.0**	28.5	13.0	2.1	17.3	0.40
Silicon	5.3	**79.6**	3.8	1.0	10.4	0.56
Aluminum	4.0	**72.1**	3.7	1.5	18.6	0.32
Titanium	18.8	**62.8**	0.4	2.0	16.0	0.04
Manganese	28.2	**55.7**	0.0	1.7	14.4	0.03
Calcium	27.2	**55.5**	3.3	3.3	10.7	0.25
Barium	25.4	**48.1**	13.4	0.1	13.0	0.03
Iron	34.9	**45.6**	4.7	1.3	13.5	0.86
Vanadium	4.0	4.1	**85.9**	0.9	5.1	0.03
Nickel	26.0	2.2	**66.6**	1.7	3.6	0.02
Chloride	0.3	0.1	0.6	**99.0**	0.0	0.11
Sulfur	13.2	8.0	9.8	0.5	**68.5**	9.10
Sodium	8.7	19.0	12.5	9.9	**49.9**	1.10

eTable 4. Correlation of gestational exposures for $PM_{2.5}$ constituents

	Zinc	Elemental carbon	Silicon	Aluminum	Vanadium	Nickel	Chloride
Sulfur	0.23	0.66	0.72	0.73	0.54	0.51	0.28
Zinc		0.78	0.66	0.66	0.80	0.85	0.73
Elemental carbon			0.87	0.90	0.91	0.90	0.59
Silicon				0.98	0.82	0.80	0.66
Aluminum					0.84	0.80	0.62
Vanadium						0.96	0.53
Nickel							0.64