SAMPLING EVENT PHOTOGRAPHS

Photo 1. Residential Vacuum Sample

Photo 2. Residential Air Sampling

Photo 3. Residential Air Sampling

Photo 4. Residential Air Sampling

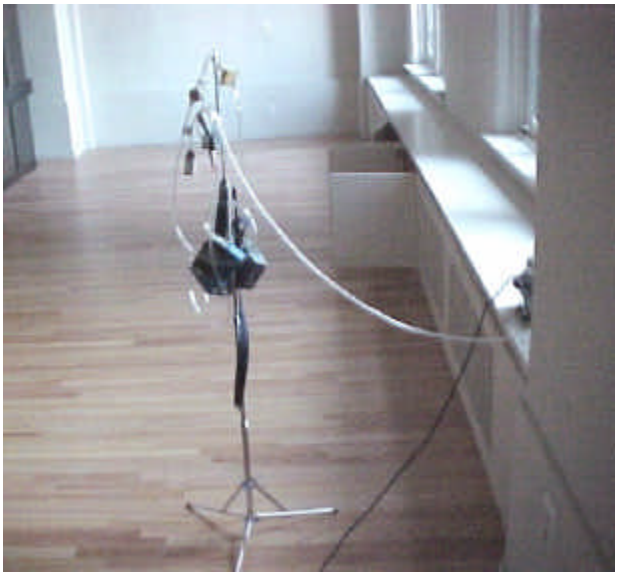


Photo 5. Residential Air Sampling

Photo 6. Residential Air Sampling

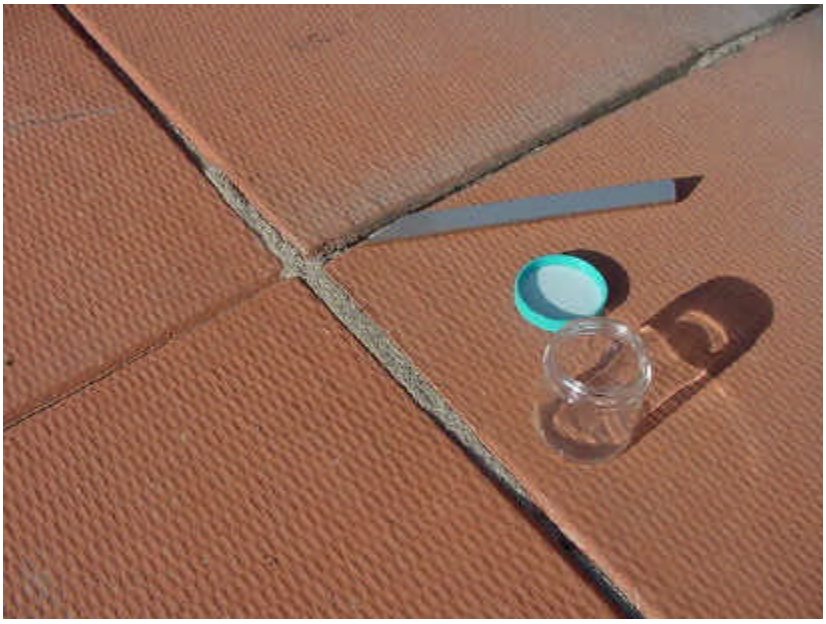


Photo 7. Outside Bulk Sampling

Photo 8. Sampling Head

APPENDICES

Appendix A. Particulate Matter Quality Assurance/Quality Control Discussion

General Notes on Quality Assurance/Quality Control Procedures

Quality assurance/quality control (QA/QC) procedures are used to ensure the precision, accuracy, completeness, representativeness, comparability, and method detection limit of the results. The co-located samples and blanks are a primary means of assessing each of the data quality indicators. Comparing the results of two co-located samples provides information on the precision of the results as a whole. Comparing sample results to their associated blanks can help identify some potential errors in accuracy. Comparing the results received to those expected and necessary to draw conclusions about the data can help in understanding the completeness and reliability of the results. Comparability can be assessed by looking at the results taken from different sampling locations of the same building—or from different buildings for the same type of location. The reviews are generally qualitative and provide a qualitative assessment of how well the data actually represents the sampled location.

The method detection limit is a more quantitative review. It is accomplished by calculating the lowest result the analytical method can accurately identify. It is based on an analysis of the blank samples and is specific for the sampling/analysis method. Reliable information can only be obtained from sample results with method detection limits significantly lower than the average value of the results and significantly lower than any comparison values to which the sample results will be compared.

The analytical results of the concentration of airborne particulate matter were provided by the laboratory as the initial weight of the filter prior to the sampling event and the final weight of the filter after the sampling event. The concentration of the particulate matter was calculated by dividing the weight of the material collected on the filter by the volume of air drawn through the filter by the pump using the following formulas.

Weight Gain of Filter = Final Weight – Initial Weight

Sample Volume = Average Pump Flow Rate × Sample Collection Time

Average Air Sampling Pump Flow Rate=(Presampling Flow Rate + Postsampling Flow Rate) ÷ 2

Concentration = Weight Change ÷ Sample Volume

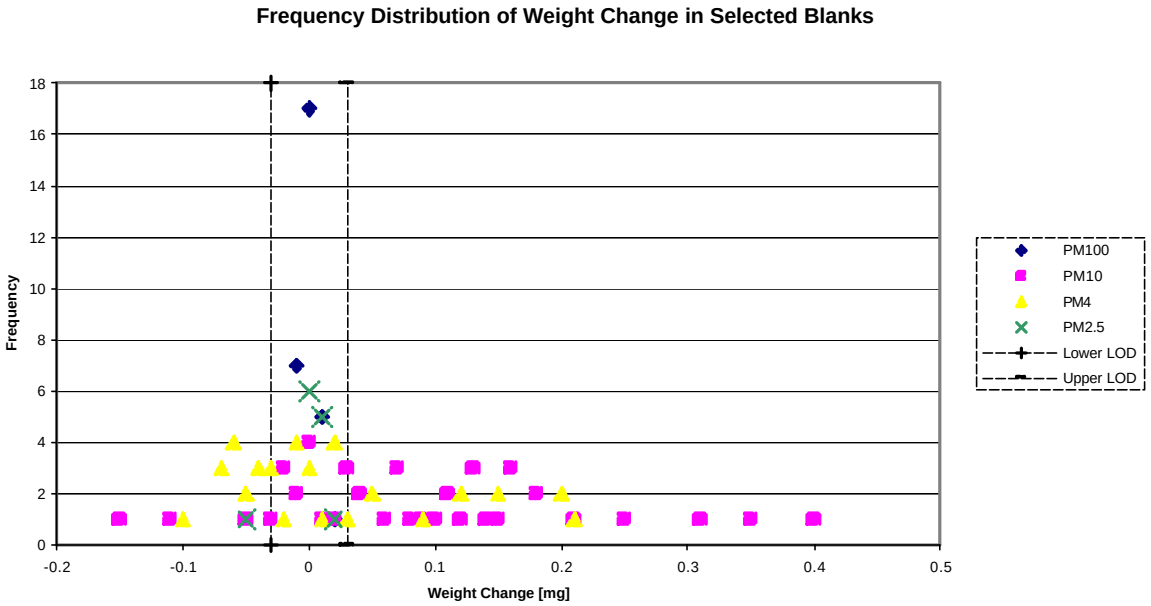
Airborne Particulate Matter Sample Results

Each area that was sampled for airborne asbestos was also sampled for airborne particulate matter (PM). The sample results from the PM measurements did not meet the data QA/QC objectives. A variety of statistical and graphical analyses were performed on, and with, the measured results in an attempt to identify the cause and extent of inconsistencies of the measured results. A subset of the measured results that are not potentially affected by these inconsistencies were not identified. Therefore, the entire data set describing airborne particulate matter concentrations was rejected. In addition, the specific cause of the inconsistencies was not identified. The following information explains why the airborne particulate matter results were rejected.

Ideally, the particulate matter data would have provided information about the airborne concentration with an aerodynamic diameter of 100 microns and less (PM100), of 10 microns and less (PM10), of 4 microns and less (PM4), and of 2.5 microns and less (PM2.5). These different size fractions (PM100, PM10, PM4, and PM2.5) are collected using slightly different equipment, but following the same basic procedures. A pump draws air into a sampling head, and size specific particulate matter is deposited onto a filter. The difference in filter weight, before and after the sampling, represents the mass of the particulate matter that was captured by the filter. Knowing the presampling and postsampling air flow rates of the pump and the time duration for sample collection allows us to calculate the average volume of air that was drawn through the filter. The concentration of the size fraction in the sampled air is then calculated by dividing the PM mass by the air volume sampled.

In addition to the filters that were used to measure the concentration of airborne particulate matter, the laboratory also sent filters to be used as field blanks. Two blanks were sent for each PM fraction for each of the two sampling teams for each building. The blanks traveled with the sample filters, went to the sampled building or area, and were treated just like the sample filters—except that they were not used. Ideally, there should be very little difference in the weight of the blanks before the sampling and after the sampling because they were not used. A weight gain in field blanks may indicate improper sample handling in the field or problems in filter weighing in the lab. For the latter a decrease in post field blank filter weight is also an indication of lab weighing error.

The graph shown with this discussion shows the frequency distribution of the air sample filter weight change in all but seven of the blanks used. Seven blanks were not included because their weight change (from a negative -90 milligrams (mg) to 5.99 mg) was greater than the limits shown in this graph (-0.2 mg to 0.5 mg). The vertical axis represents the number of blanks that had a weight change within 0.01 mg of the weight change shown on the horizontal axis.



The dashed vertical lines show the upper and lower limits of detection expected for this method (+/– 0.03 mg). The distance between limits of detection represents the maximum weight gain expected for the blanks if the entire sampling procedure was followed as required by standard sampling methodologies. All of the size fractions had at least two blanks outside the limit of detection boundaries. (The two out of range blanks for PM100 are not shown on the graph because they are also beyond the boundaries of the graph). Approximately 6% of the PM100, 70% of the PM10, 57% of the PM4, and 8% of the PM2.5 blanks had weight changes greater than the limit of detection.

In general, blanks are used (1) to assess the ability of the sampling and laboratory analysis methodology to accurately estimate the concentration of particulate matter in the air at the sampled location and (2) to validate that there is no filter contamination problem from the time the blanks are initially weighed in the laboratory until the time the blanks are weighed in the laboratory after sampling. Errors could occur at any step in the process.

The large weight change of the blanks indicates errors in either the laboratory weighing process or the air sampling process. The graph illustrates that the results of the airborne particulate matter sampling cannot be used to reliably estimate the actual concentration of any of the particulate matter size fractions; therefore, the entire data set was rejected from further consideration.

Appendix B. Survey Result

Summary of Residential Sampling Survey Form Results and Review of Photographs
(Abbreviations and terms used in the table are defined on the last page in this table.)

Event Number	Location	Number of Broken Windows	Dust Visible Initially	Dust Visible Currently	Residence Occupied	Cleaning Method	Aggressive Sampling	Level of Dust in Photo	Photo Comments
1	Outside	28						None Visible	
1	Common	0	SI	N		C		None Visible	Prepared for asbestos abatement
1	Residence 1	2	LI	Y	U	None	N	Large Amount	Large amount of WTC dust; more than other locations sampled
1	Residence 2	0	NI	N	U	None	Y	None Visible	
2	Outside	1		Y				None Visible	
2	Common	0	NI	N		C		Slight Amount	
2	Residence 1	0	SI	N	Y	C	N	None Visible	Residence window faces WTC site
2	Residence 2	0	SI	N	U	C	Y	None Visible	
3	Outside	0		N				None Visible	Sampled from courtyard several floors up
3	Common	0	LI	N		AA		None Visible	
3	Residence 1	0	LI	N	Y	AA	N	None Visible	
3	Residence 2	0	MI	N	Y	C	N	None Visible	
4	Outside	0		N				Slight Amount	
4	Common	0	NI	Y		O		None Visible	
4	Residence 1	0	SI	Y	N	None	Y	None Visible	
4	Residence 2	0	SI	Y	N	None	Y	None Visible	
5	Outside	50		Y				Large Amount	
5	Common	0	SI	N		AA		None Visible	
5	Residence 1	6	LI	LI	Y	AA	Y	None Visible	
5	Residence 2	6	LI	LI	Y	AA	Y	None Visible	Room looks clean but lots of WTC dust outside one window sill
6	Outside	200		N				None Visible	
6	Common	0	SI	N		C			Couldn't identify photos for common area
6	Residence 1	0	LI	N	U	C	Y	None Visible	
6	Residence 2	0	SI	N	U	C	Y	None Visible	
7	Outside	2		N				None Visible	
7	Common	0	MI	N		C		None Visible	Many window sills (not sure where) have significant amount of WTC dust on outside ledge, not noticeable on inside of window.
7	Residence 1	0	MI	N	Y	C	N	None Visible	
7	Residence 2	0	MI	N	Y	C	N	None Visible	Resident has window view of WTC site

Summary of Residential Sampling Survey Form Results and Review of Photographs
(Abbreviations and terms used in the table are defined on the last page in this table.)

Event Number	Location	Number of Broken Windows	Dust Visible Initially	Dust Visible Currently	Residence Occupied	Cleaning Method	Aggressive Sampling	Level of Dust in Photo	Photo Comments
8	Outside	0		N				None Visible	
8	Common	0	MI	N		C		None Visible	
8	Residence 1	1	SI	N	Y	O	N	None Visible	
8	Residence 2	1	MI	N	Y	C	N	None Visible	Resident has window view of WTC site
9	Outside	2		N				None Visible in Picture	Utility/road construction occurring near building and across the street from the front door.
9	Common	0	LI	N		C		None Visible	
9	Residence 1	0	MI	Y	Y	C	Y	None Visible	
9	Residence 2	0	MI	Y	Y	C	Y	Slight Amount	
10	Outside	0		Y				Slight Amount	
10	Common	0	SI	N		AA		None Visible	
10	Residence 1	0	NI	N	Y	AA	Y	None Visible	View of Statue of Liberty
10	Residence 2	1	SI	N	Y	AA	Y	None Visible	
11	Outside	0	LI	N				None Visible	Looks like many dried, fallen leaves on sidewalk
11	Common	0	SI	N		MS		None Visible	
11	Residence 1	0	SI	N	V	None	Y	None Visible	
11	Residence 2	0	UNK	N	V	UNK	Y	None Visible	Wall AC unit was removed, it was just a hole to the outside
12	Outside	0		N				None Visible	Looks like many dried, fallen leaves on sidewalk
12	Common	0	SI	N		MS		None Visible	
12	Residence 1	0	MI	Y	V	None	N	Large Amount	Very messy, doesn't look like “WTC dust” (has “'post-move-out'” look)
12	Residence 2	0	SI	N	V	None	Y	None Visible	
13	Outside	0		N				Slight Amount	A little messy, but does not look like WTC dust
13	Common	0	MI	N		MS		None Visible	
13	Residence 1	0	MI	N	V	C	Y	None Visible	
13	Residence 2	0	MI	Y	V	C	Y	Large Amount	Very messy, but not with WTC dust (post-move-out look)
14	Outside	0		N				None Visible	Air sample from garden area; no bulk sample taken; WTC dust visible on neighboring building.
14	Common	0	SI	N		C		None Visible	
14	Residence 1	0	MI	Y	U	None	Y	Large Amount	Light dust on floors; one pile of “material,” could be from remodeling activity

Summary of Residential Sampling Survey Form Results and Review of Photographs
(Abbreviations and terms used in the table are defined on the last page in this table.)

Event Number	Location	Number of Broken Windows	Dust Visible Initially	Dust Visible Currently	Residence Occupied	Cleaning Method	Aggressive Sampling	Level of Dust in Photo	Photo Comments
14	Residence 2	0	MI	Y	U	None	Y	None Visible	Pile of trash swept into center of room; no WTC dust
15	Outside	0		N				None Visible	Bulk sample from roof top courtyard,
15	Common	0	SI	Y		MS		None Visible	Dust visible in (and sampled from) cracks between tiles.
15	Residence 1	0	SI	Y	U	O	Y	None Visible	
15	Residence 2	0	SI	N	U	O	Y	None Visible	
16	Outside	0		N				None Visible	
16	Common	0	MI	N		C		None Visible	
16	Residence 1	0				MS		None Visible	
16	Residence 2	0	LI	N	Y	O	N		No picture
17	Outside	0		N				Slight Amount	Dirty/messy, but doesn't look like WTC dust
17	Common	0	SI	Y		C		None Visible	
17	Residence 1	0	SI	N	Y	C	N	None Visible	
17	Residence 2	0	MI	Y	U	C	Y	Slight Amount	
18	Outside	0		N				M	Sample looks granular and sandy, not gray like WTC dust
18	Common	0	LI	N		MS		None Visible	Leaf track-in visible
18	Residence 1	0	MI	N	Y	C	N	None Visible	Window view of WTC site
18	Residence 2	0	LI	N	Y	C	N	None Visible	
19	Outside	0		N				Moderate	Visible in, and sampled from, sidewalk joint with building; sidewalk looked cleaner.
19	Common	0	SI	N		C		None Visible	
19	Residence 1	0	LI	N	Y	O	N	None Visible	
19	Residence 2	0	NI	N	Y	O	N		No picture
20	Outside	0		N				Unk	Too distant to see surface dust
20	Common	0	SI	N		MS		None Visible	
20	Residence 1	0	NI	N	Y	O	N	None Visible	
20	Residence 2	0	SI	N	Y	O	N		No picture
21	Outside	0		N				None Visible	
21	Common	0	SI	N		C		None Visible	
21	Residence 1	0	SI	N	Y	C	N	None Visible	
21	Residence 2	0	NI	N	Y	C	N	None Visible	

Summary of Residential Sampling Survey Form Results and Review of Photographs
(Abbreviations and terms used in the table are defined on the last page in this table.)

Event Number	Location	Number of Broken Windows	Dust Visible Initially	Dust Visible Currently	Residence Occupied	Cleaning Method	Aggressive Sampling	Level of Dust in Photo	Photo Comments
22	Outside	8		Y				None Visible	Sidewalk/entrance to building and roof courtyard look clean, but there is a pile of material to sample on roof; location is unknown.
22	Common	1	LI	N		C		None Visible	
22	Residence 1	0	MI	Y	Y	MS	N	None Visible	
22	Residence 2	0	LI	N	Y	C	N	None Visible	
23	Outside	0		N				None Visible	
23	Common	0	SI	N		C		None Visible	
23	Residence 1	0	MI	Y	Y	O	N	None Visible	
23	Residence 2	0	MI	N	Y	O	N	None Visible	
24	Outside	0		N				None Visible	
24	Common	0	LI	N		MS		None Visible	
24	Residence 1	0	SI	N	Y	O	N	None Visible	
24	Residence 2	0	SI	N	Y	C	N	None Visible	
25	Outside	0		N				None Visible	
25	Common	0	NI	N		MS		None Visible	
25	Residence 1	0	NI	N	Y	O	N	None Visible	
25	Residence 2	0	SI	N	Y	C	N	None Visible	
26	Outside	0		N				None Visible	
26	Common	0	NI	N		MS		None Visible	Floor area sampled contained some broken tiles.
26	Residence 1	0	NI	N	Y	O	N	None Visible	
26	Residence 2	0	SI	N	Y	O	N	None Visible	
27	Outside	0		N				None Visible	
27	Common	0	MI	N		MS		None Visible	
27	Residence 1	0	LI	N	Y	C	N	None Visible	
27	Residence 2	0	SI	N	Y	C	N	None Visible	
28	Outside	0						None Visible	Bulk sample from 4-inch wide strip between two different tiled areas; thick with granular/dusty/other material, not sure if any is WTC.
28	Common	0	LI	Y		C		None Visible	
28	Residence 1	3	LI	N	U	C	N	None Visible	
28	Residence 2	0	MI	N	U	C	N	None Visible	
29	Outside	0		N				None Visible	Bulk sample from small pile at an inside corner of the building wall

Summary of Residential Sampling Survey Form Results and Review of Photographs
(Abbreviations and terms used in the table are defined on the last page in this table.)

Event Number	Location	Number of Broken Windows	Dust Visible Initially	Dust Visible Currently	Residence Occupied	Cleaning Method	Aggressive Sampling	Level of Dust in Photo	Photo Comments
29	Common	0	NI	N		C		None Visible	
29	Residence 1	0	SI	N	Y	O	N	None Visible	
29	Residence 2	0	SI	Y	Y	O	N	None Visible	
30	Outside	0							No picture
30	Common	0							No picture
30	Residence 1	0	SI	N	Y	O	N	None Visible	
30	Residence 2	0	MI	N	Y	C	N	None Visible	
31	Outside	0						None Visible	
31	Common	0	NI	N		MS		None Visible	
31	Residence 1	0	NI	N	N	MS	Y	None Visible	
31	Residence 2	0	NI	UNK	Y	O	N	None Visible	
32	Outside	0						None Visible	Trash visible on sidewalk
32	Common	0	NI	N		MS		None Visible	
32	Residence 1	0	NI	N	Y	O	N	None Visible	
32	Residence 2	0							
33	Outside	0						None Visible	
33	Common	0							
33	Residence 1	0							
33	Residence 2	0	NI	Y	Y	O	N	None Visible	
34	Outside	0		N				None Visible	
34	Common	0	NI	N		MS		None Visible	
34	Residence 1	0							
34	Residence 2	0	UNK	N	Y	O	N	None Visible	

Summary of Residential Sampling Survey Form Results and Review of Photographs
(Abbreviations and terms used in the table are defined on the last page in this table.)

Event Number	Location	Number of Broken Windows	Dust Visible Initially	Dust Visible Currently	Residence Occupied	Cleaning Method	Aggressive Sampling	Level of Dust in Photo	Photo Comments

AA = asbestos abatement professionals
C = contractor
LI = large increase
M = moderate increase
MS = building management staff
N = no
NI = no Increase
O = owner/tenant
SI = slight increase over normal
UNK = unknown
Y = yes

Appendix C. Detailed Analytic Results

Results of Fiber Analyses

Results of fiber analyses in air and dust samples from 30 residential buildings (1–30) in lower Manhattan and 4 comparison buildings (31–34) above 59th Street. The range of values measured in the comparison buildings is shown in the summary of comparison areas above 59th Street.

Building Number	Sample Location	Results From Air Samples			Results From Dust Samples		
		Fibers in Air PCM (f/cc)	Asbestos in Air TEM (f/cc)	SVF in Air SEM (f/cc)	Asbestos in Dust PLM (%)	Asbestos in Dust TEM (%)	SVF in Dust PLM (%)
Summary of Comparison Areas Above 59th Street							
	Outside	<.001–0.001	NA	ND–<.000043	Not Sampled	Not Sampled	Not Sampled
	Common	<.001–0.002	NA	ND–0.000043	ND	ND	ND
	Residences	<.001–0.003	NA	ND–0.000087	ND	ND	ND
Results for Individual Buildings Sampled in Lower Manhattan (Buildings 1–30)							
1	Outside	0.001			ND	<1	22
1	Common	<.001			Not Sampled	Not Sampled	Not Sampled
1	Residence 1	0.006	<.001	0.000162	ND	NA	20
1	Residence 2	<.001			ND	NA	20
2	Outside	0.003			<1	1.2	28
2	Outside co-located	Not Sampled	Not Sampled	Not Sampled	1.3	NA	25
2	Common	0.005	<.001	0.000255	ND	NA	27
2	Residence 1	<.001			ND	NA	25
2	Residence 2	0.002			ND	NA	20
2	Window sill	Not Sampled	Not Sampled	Not Sampled	<1	<1	30
3	Outside	<.001			Not Sampled	Not Sampled	Not Sampled
3	Res 2 co-located	<.001			Not Sampled	Not Sampled	Not Sampled
3	Common	<.001			Not Sampled	Not Sampled	Not Sampled
3	Residence 1	<.001			Not Sampled	Not Sampled	Not Sampled
3	Residence 2	<.001			Not Sampled	Not Sampled	Not Sampled
4	Outside	0.001			Not Sampled	Not Sampled	Not Sampled
4	Outside co-located	<.001			Not Sampled	Not Sampled	Not Sampled
4	Common	0.001			ND	<1	15
4	Common co-located	0.001			Not Sampled	Not Sampled	Not Sampled
4	Residence 1	<.001			ND	<1	2
4	Residence 2	0.001			ND	<1	5
5	Outside	0.002			3.4	NA	25

Building Number	Sample Location	Results From Air Samples			Results From Dust Samples		
		Fibers in Air PCM (f/cc)	Asbestos in Air TEM (f/cc)	SVF in Air SEM (f/cc)	Asbestos in Dust PLM (%)	Asbestos in Dust TEM (%)	SVF in Dust PLM (%)
5	Outside co-located	0.003			Not Sampled	Not Sampled	Not Sampled
5	Common	0.002			Not Sampled	Not Sampled	Not Sampled
5	Residence 1	0.002			<1	<1	10
5	Residence 2	<.001			ND	<1	20
6	Outside	<.001			Not Sampled	Not Sampled	Not Sampled
6	Common	<.001			ND	<1	10
6	Res 2 co-located	0.002			Not Sampled	Not Sampled	Not Sampled
6	Residence 1	<.001			ND	ND	15
6	Residence 2	<.001			ND	ND	15
7	Outside	<.001			ND	1.7	35
7	Common	0.001			ND	ND	5
7	Residence 1	0.001			ND	ND	ND
7	Residence 2	<.001			ND	ND	5
7	Window sill (R2)	Not Sampled	Not Sampled	Not Sampled	ND	ND	40
8	Outside	0.001			Not Sampled	Not Sampled	Not Sampled
8	Common	0.002			ND	ND	ND
8	Residence 1	0.003			ND	ND	ND
8	Residence 2	0.002			ND	ND	ND
9	Outside	<.001			Not Sampled	Not Sampled	Not Sampled
9	Common	0.001			ND	ND	7
9	Common co-located	0.001			Not Sampled	Not Sampled	Not Sampled
9	Residence 1	0.001			ND	<1	2
9	Residence 2	0.003			ND	<1	5
10	Outside	0.001			ND	ND	ND
10	Common	0.002			ND	1.5	20
10	Common, TEM re-analysis					<1	
10	Residence 1	0.001			ND	ND	15
10	Residence 2	0.001			ND	ND	10
11	Outside	<.001			Not Sampled	Not Sampled	Not Sampled
11	Common	<.001			ND	ND	ND
11	Common co-located	<.001			Not Sampled	Not Sampled	Not Sampled
11	Residence 1	<.001			ND	<1	ND
11	Residence 2	<.001			ND	1.5	ND
12	Outside	<.001			Not Sampled	Not Sampled	Not Sampled

Building Number	Sample Location	Results From Air Samples			Results From Dust Samples		
		Fibers in Air PCM (f/cc)	Asbestos in Air TEM (f/cc)	SVF in Air SEM (f/cc)	Asbestos in Dust PLM (%)	Asbestos in Dust TEM (%)	SVF in Dust PLM (%)
12	Common	<.001			ND	ND	ND
12	Residence 1	0.001			ND	ND	5
12	Residence 2	<.001			ND	ND	5
13	Outside	0.001			Not Sampled	Not Sampled	Not Sampled
13	Common	0.001			ND	ND	ND
13	Residence 1	0.003			ND	ND	10
13	Residence 2	0.002			ND	ND	ND
14	Outside	<.001			Not Sampled	Not Sampled	Not Sampled
14	Common	0.0013			ND	ND	5
14	Residence 1	0.001			ND	ND	ND
14	Res 1 co-located	<.001			Not Sampled	Not Sampled	Not Sampled
14	Residence 2	<.001			ND	ND	ND
15	Outside	<.001			ND	1.9	72
15	Common	0.001			ND	ND	ND
15	Residence 1	<.001			ND	<1	ND
15	Residence 2	<.001			ND	ND	5
16	Outside	<.001			ND	ND	1
16	Common	<.001			ND	ND	ND
16	Residence 1	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
16	Residence 2	<.001			ND	ND	ND
16	Res 2 co-located	Not Sampled	Not Sampled	Not Sampled	ND	NA	ND
16	Res 2 filter piece	Not Sampled	Not Sampled	Not Sampled	ND	NA	ND
17	Outside	<.001			Not Sampled	Not Sampled	Not Sampled
17	Common	<.001			ND	ND	2
17	Residence 1	<.001			ND	ND	ND
17	Residence 2	<.001			ND	ND	ND
18	Outside	<.001			ND	ND	30
18	Common	<.001			ND	ND	ND
18	Residence 1	0.002			ND	ND	30
18	Residence 2	0.002			ND	ND	35

Building Number	Sample Location	Results From Air Samples			Results From Dust Samples		
		Fibers in Air PCM (f/cc)	Asbestos in Air TEM (f/cc)	SVF in Air SEM (f/cc)	Asbestos in Dust PLM (%)	Asbestos in Dust TEM (%)	SVF in Dust PLM (%)
19	Outside	<.001			ND	NA	ND
19	Common	overloaded	<.006		ND	ND	ND
19	Residence 1	<.001			ND	ND	ND
19	Residence 2	<.001			ND	ND	ND
20	Outside	<.001			Not Sampled	Not Sampled	Not Sampled
20	Outside co-located	<.001			Not Sampled	Not Sampled	Not Sampled
20	Common	<.001			ND	ND	ND
20	Residence 1	<.001			ND	ND	ND
20	Residence 2	<.001			ND	ND	ND
21	Outside	<.001			Not Sampled	Not Sampled	Not Sampled
21	Common	<.001			ND	ND	ND
21	Residence 1	<.001			ND	ND	ND
21	Residence 2	<.001			ND	ND	ND
22	Outside	<.001			ND	ND	7
22	Common	0.001			ND	ND	3
22	Residence 1	<.001			ND	ND	2
22	Residence 2	<.001			ND	ND	ND
22	Res 2 co-located	<.001			Not Sampled	Not Sampled	Not Sampled
23	Outside	<.001			Not Sampled	Not Sampled	Not Sampled
23	Common	<.001			ND	ND	ND
23	Residence 1	<.001			ND	ND	ND
23	Residence 2	<.001			ND	ND	ND
24	Outside	0.002			ND	ND	55
24	Common	0.001			ND	<1	5
24	Residence 1	0.001			ND	ND	ND
24	Residence 2	0.005	<.001	0.000037	ND	ND	10
24	Res 2 co-located	0.005	<.001		Not Sampled	Not Sampled	Not Sampled
25	Outside	<.001			Not Sampled	Not Sampled	Not Sampled
25	Common	<.001			ND	ND	5
25	Residence 1	<.001			ND	ND	5
25	Residence 2	0.001			ND	ND	ND
26	Outside	0.001			Not Sampled	Not Sampled	Not Sampled
26	Common	0.004	<.001	<0.00004	ND	ND	5
26	Residence 1	0.012	<.001	<0.00004	ND	ND	ND

Building Number	Sample Location	Results From Air Samples			Results From Dust Samples		
		Fibers in Air PCM (f/cc)	Asbestos in Air TEM (f/cc)	SVF in Air SEM (f/cc)	Asbestos in Dust PLM (%)	Asbestos in Dust TEM (%)	SVF in Dust PLM (%)
26	Residence 2	<.001			ND	ND	ND
27	Outside	<.001			ND	<1	15
27	Common	<.001			ND	<1	10
27	Residence 1	<.001			ND	<1	10
27	Residence 2	<.001			ND	ND	10
28	Outside	<.001			ND	ND	15
28	Common	0.001			ND	ND	10
28	Residence 1	<.001			ND	Insufficient Material	ND
28	Residence 2	0.002			ND	ND	ND
29	Outside	<.001			ND	ND	ND
29	Common	<.001			ND	ND	ND
29	Residence 1	<.001			ND	ND	ND
29	Residence 2	<.001			ND	ND	ND
30	Outside	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
30	Common	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
30	Residence 1	<.001			ND	ND	ND
30	Residence 2	<.001			ND	ND	ND
Results for Comparison Buildings Sampled Above 59th Street (Buildings 31–34)							
31	Outside	<.001			Not Sampled	Not Sampled	Not Sampled
31	Outside co-located	0.001		0.000039	Not Sampled	Not Sampled	Not Sampled
31	Common	<.001			ND	ND	ND
31	Residence 1	<.001		<0.000039	ND	ND	ND
31	Residence 2	<.001		<0.000038	ND	ND	ND
32	Outside	<.001		<0.000039	Not Sampled	Not Sampled	Not Sampled
32	Common	0.002		<0.00004	ND	ND	ND
32	Residence 1	<.001			ND	ND	ND
32	Res 1 co-located	0.001		0.000087	Not Sampled	Not Sampled	Not Sampled
32	Residence 2	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
33	Outside	Not Sampled			Not Sampled	Not Sampled	Not Sampled
33	Common	Not Sampled			Not Sampled	Not Sampled	Not Sampled
33	Residence 1	Not Sampled			Not Sampled	Not Sampled	Not Sampled
33	Residence 2	<.001		<0.000041	ND	ND	ND
34	Outside	<.001		<0.000043	Not Sampled	Not Sampled	Not Sampled

Building Number	Sample Location	Results From Air Samples			Results From Dust Samples		
		Fibers in Air PCM (f/cc)	Asbestos in Air TEM (f/cc)	SVF in Air SEM (f/cc)	Asbestos in Dust PLM (%)	Asbestos in Dust TEM (%)	SVF in Dust PLM (%)
34	Common	<.001		0.000043	ND	ND	ND
34	Residence 1	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
34	Residence 2	0.002			ND	Insuf. Material	ND
34	Res 2 co-located	0.003		<0.000047	Not Sampled	Not Sampled	Not Sampled

f/cc: fibers per cubic centimeter of air
NA: not analyzed
ND: not detected
PCM: phase contrast microscopy
PLM: polarized light microscopy
SEM: scanning electron microscopy
SVF: synthetic vitreous fibers
TEM: transmission electron microscopy
%: percent

Results of Mineral Analyses in Dust and Air

The following table shows the results of analyses of the minerals in settled dust and air samples for 30 residential buildings in lower Manhattan (1–30) and 4 comparison buildings (31–34) above 59th Street. For each building, the table shows the highest estimated air concentration of mineral for each size fraction. In addition, estimated levels of each mineral in the settled surface dust are shown for each sampled location within a building.

Building Number	Sample Type	Method or Location	Quartz	Cristobalite	Tridymite	Calcite	Portlandite	Gypsum	Mica	Halite
Summary of Comparison Areas Above 59th Street										
	Air (µg/m³)	PM100	ND	ND	ASN	ND	ND	ND–3 J	ND	ND
	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	ND–3 J	ND	ND
	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	ND–5 J	ND	ND
	Air (µg/m³)	PM2.5	ND	ND	ASN	ND	ND	ND–3 J	ND	ND
	Settled surface dust (%)	Common Area	ND–1 J	ND	ND	ND–0.4 J	ND–0.05 J	ND–3 J	ND	ND
	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
	Settled surface dust (%)	Residence 1&2	ND–2 J	ND	ND	ND–0.9 J	ND–0.08 J	2–4 J	ND–0.08 J	ND–0.4 J
Results for Individual Buildings Sampled in Lower Manhattan (Buildings 1–30)										
1	Air (µg/m³)	PM100	ND	ND	ASN	ND	ND	6 J	ND	ND
1	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	14 J	ND	ND
1	Air (µg/m³)	PM4	ND	ND	ASN	6 J	84 J	12 J	ND	ND
1	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
1	Settled surface dust (%)	Common area	NS	NS	NS	NS	NS	NS	NS	NS
1	Settled surface dust (%)	Outdoor	27 J	ND	ND	15 J	6 J	14 J	ND	ND
1	Settled surface dust (%)	Residence 1	19 J	ND	ND	18 J	2 J	30 J	0.3 J	ND
1	Settled surface dust (%)	Residence 2	31 J	ND	ND	21 J	6 J	4 J	0.05 J	ND
2	Air (µg/m³)	PM100	ND	ND	ASN	ND	ND	ND	ND	ND
2	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
2	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	7J	ND	ND
2	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
2	Settled surface dust (%)	Common area	1 J	ND	ND	ND	2 J	14 J	ND	ND
2	Settled surface dust (%)	Outdoor	21 J	ND	ND	19 J	3 J	27 J	ND	<0.03 J
2	Settled surface dust (%)	Residence 1	3 J	ND	ND	2 J	0.9 J	6 J	ND	ND
2	Settled surface dust (%)	Residence 2	23 J	ND	ND	15 J	4 J	9 J	ND	ND
3	Air (µg/m³)	PM100	6 J	15 J	ASN	5 J	24 J	5 J	13 J	ND
3	Air (µg/m³)	PM10	5 J	ND	ASN	5 J	25 J	6 J	ND	ND
3	Air (µg/m³)	PM4	6 J	ND	ASN	6 J	26 J	7 J	ND	ND
3	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS

Building Number	Sample Type	Method or Location	Quartz	Cristobalite	Tridymite	Calcite	Portlandite	Gypsum	Mica	Halite
3	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
3	Settled surface dust (%)	Common	NS	NS	NS	NS	NS	NS	NS	NS
3	Settled surface dust (%)	Residence 1	NS	NS	NS	NS	NS	NS	NS	NS
3	Settled surface dust (%)	Residence 2	NS	NS	NS	NS	NS	NS	NS	NS
4	Air (µg/m^3)	PM100	4 J	ND	ASN	4 J	16 J	3 J	9 J	5 J
4	Air (µg/m^3)	PM10	4 J	ND	ASN	3 J	16 J	3 J	ND	4 J
4	Air (µg/m^3)	PM4	6 J	ND	ASN	6 J	28 J	5 J	14 J	8 J
4	Air (µg/m^3)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
4	Settled surface dust (%)	Common area	ND	ND	ND	1 J	0.4 J	8 J	ND	ND
4	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
4	Settled surface dust (%)	Residence 1	0.2 J	ND	ND	0.06 J	0.7 J	1 J	ND	ND
4	Settled surface dust (%)	Residence 2	14 J	ND	ND	5 J	2 J	9 J	ND	0.1 J
5	Air (µg/m^3)	PM100	ND	ND	ASN	14 J	95 J	14 J	ND	14 J
5	Air (µg/m^3)	PM10	ND	ND	ASN	ND	ND	14 J	ND	ND
5	Air (µg/m^3)	PM4	ND	ND	ASN	ND	ND	15 J	ND	ND
5	Air (µg/m^3)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
5	Settled surface dust (%)	Common area	NS	NS	NS	NS	NS	NS	NS	NS
5	Settled surface dust (%)	Outdoor	23 J	ND	ND	8 J	ND	ND	ND	ND
5	Settled surface dust (%)	Residence 1	2 J	ND	ND	ND	ND	9 J	ND	ND
5	Settled surface dust (%)	Residence 2	11 J	ND	ND	4 J	0.5 J	2 J	ND	ND
6	Air (µg/m^3)	PM100	ND	ND	ASN	ND	ND	ND	ND	ND
6	Air (µg/m^3)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
6	Air (µg/m^3)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
6	Air (µg/m^3)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
6	Settled surface dust (%)	Common area	17 J	ND	ND	10 J	3 J	20 J	0.6 J	ND
6	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
6	Settled surface dust (%)	Residence 1	27 J	ND	ND	17 J	8 J	13 J	ND	ND
6	Settled surface dust (%)	Residence 2	24 J	ND	ND	15 J	4 J	4 J	0.03 J	ND
7	Air (µg/m^3)	PM100	ND	ND	ASN	8 J	54 J	10 J	ND	ND
7	Air (µg/m^3)	PM10	ND	ND	ASN	ND	ND	11 J	ND	ND
7	Air (µg/m^3)	PM4	ND	ND	ASN	ND	ND	11 J	ND	ND
7	Air (µg/m^3)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
7	Settled surface dust (%)	Common area	11 J	ND	ND	8 J	3 J	15 J	0.09 J	0.04 J
7	Settled surface dust (%)	Outdoor	14 J	ND	ND	7 J	1 J	12 J	ND	0.1 J
7	Settled surface dust (%)	Residence 1	14 J	ND	ND	13 J	2 J	2 J	ND	ND

Building Number	Sample Type	Method or Location	Quartz	Cristobalite	Tridymite	Calcite	Portlandite	Gypsum	Mica	Halite
7	Settled surface dust (%)	Residence 2	21 J	ND	ND	16 J	3 J	4 J	ND	0.09 J
7	Settled surface dust (%)	Residence 2-co	18 J	ND	ND	9 J	1 J	2 J	ND	ND
8	Air (µg/m^3)	PM100	ND	ND	ASN	7 J	ND	10 J	ND	ND
8	Air (µg/m^3)	PM10	ND	ND	ASN	ND	ND	9 J	ND	ND
8	Air (µg/m^3)	PM4	ND	ND	ASN	6 J	ND	12 J	43 J	19 J
8	Air (µg/m^3)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
8	Settled surface dust (%)	Common area	19 J	ND	ND	9 J	2 J	15 J	ND	ND
8	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
8	Settled surface dust (%)	Residence 1	15 J	ND	ND	10 J	3 J	17 J	ND	ND
8	Settled surface dust (%)	Residence 2	28 J	ND	ND	21 J	4 J	6 J	ND	ND
9	Air (µg/m^3)	PM100	ND	ND	ASN	ND	ND	3 J	ND	ND
9	Air (µg/m^3)	PM10	ND	ND	ASN	4 J	ND	6 J	ND	ND
9	Air (µg/m^3)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
9	Air (µg/m^3)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
9	Settled surface dust (%)	Common area	25 J	ND	ND	9 J	4 J	16 J	0.09 J	0.06 J
9	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
9	Settled surface dust (%)	Residence 1	10 J	ND	ND	2 J	0.9 J	5 J	ND	ND
9	Settled surface dust (%)	Residence 2	4 J	ND	ND	ND	ND	2 J	ND	ND
10	Air (µg/m^3)	PM100	ND	ND	ASN	ND	ND	ND	ND	ND
10	Air (µg/m^3)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
10	Air (µg/m^3)	PM4	ND	ND	ASN	8 J	ND	ND	ND	ND
10	Air (µg/m^3)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
10	Settled surface dust (%)	Common area	2 J	ND	ND	3 J	ND	1 J	ND	ND
10	Settled surface dust (%)	Common area-co	NS	NS	NS	NS	NS	NS	NS	NS
10	Settled surface dust (%)	Outdoor	21 J	ND	ND	14 J	3 J	5 J	0.09 J	0.05 J
10	Settled surface dust (%)	Residence 1	3 J	ND	ND	ND	0.06 J	ND	ND	ND
10	Settled surface dust (%)	Residence 2	2 J	ND	ND	ND	ND	0.8 J	ND	0.04 J
11	Air (µg/m^3)	PM100	NS	NS	NS	NS	NS	NS	NS	NS
11	Air (µg/m^3)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
11	Air (µg/m^3)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
11	Air (µg/m^3)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
11	Settled surface dust (%)	Common area	2 J	ND	ND	ND	ND	1 J	ND	ND
11	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
11	Settled surface dust (%)	Residence 1	0.2 J	ND	ND	0.02 J	ND	2 J	ND	ND
11	Settled surface dust (%)	Residence 2	0.07 J	ND	ND	ND	ND	ND	ND	ND

Building Number	Sample Type	Method or Location	Quartz	Cristobalite	Tridymite	Calcite	Portlandite	Gypsum	Mica	Halite
12	Air (µg/m³)	PM100	NS	NS	NS	NS	NS	NS	NS	NS
12	Air (µg/m³)	PM10	3 J	ND	ASN	5 J	18 J	4 J	8 J	5 J
12	Air (µg/m³)	PM4	5 J	ND	ASN	7 J	28 J	6 J	15 J	7 J
12	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
12	Settled surface dust (%)	Common area	4 J	ND	ND	2 J	3 J	1 J	ND	ND
12	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
12	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	0.3 J	ND	ND
12	Settled surface dust (%)	Residence 2	0.4 J	ND	ND	0.09 J	0.06 J	0.8 J	ND	ND
13	Air (µg/m³)	PM100	5 J	ND	ASN	5 J	16 J	3 J	ND	ND
13	Air (µg/m³)	PM10	4 J	ND	ASN	5 J	16 J	3 J	ND	ND
13	Air (µg/m³)	PM4	7 J	ND	ASN	10 J	26 J	5 J	ND	ND
13	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
13	Settled surface dust (%)	Common area	0.05 J	ND	ND	0.3 J	0.04 J	1 J	ND	ND
13	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
13	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	1 J	ND	ND
13	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	0.8 J	ND	ND
14	Air (µg/m³)	PM100	ND	ND	ASN	ND	ND	ND	ND	ND
14	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
14	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
14	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
14	Settled surface dust (%)	Common area	0.03 J	ND	ND	ND	ND	2 J	ND	0.04 J
14	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
14	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	ND	ND	ND
14	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	0.08 J	ND	ND
15	Air (µg/m³)	PM100	8 J	ND	ASN	3 J	18 J	ND	ND	ND
15	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	3 J	ND	ND
15	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	5 J	ND	ND
15	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
15	Settled surface dust (%)	Common area	0.4 J	ND	ND	0.02 J	ND	1 J	ND	ND
15	Settled surface dust (%)	Outdoor	1 J	ND	ND	ND	0.3 J	2 J	ND	ND
15	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	1 J	ND	ND
15	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	ND	ND	ND
16	Air (µg/m³)	PM100	4 J	ND	ASN	3 J	17 J	3 J	ND	ND
16	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	4 J	ND	ND
16	Air (µg/m³)	PM4	18 J	ND	ASN	5 J	27 J	7 J	ND	ND

Building Number	Sample Type	Method or Location	Quartz	Cristobalite	Tridymite	Calcite	Portlandite	Gypsum	Mica	Halite
16	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
16	Settled surface dust (%)	Common area	ND	ND	ND	ND	ND	0.09 J	ND	ND
16	Settled surface dust (%)	Outdoor	3 J	ND	ND	1 J	0.6 J	0.04 J	0.06 J	0.04 J
16	Settled surface dust (%)	Residence 1	NS	NS	NS	NS	NS	NS	NS	NS
16	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	0.9 J	ND	ND
16	Settled surface dust (%)	R2 filter piece	2 J	ND	ND	0.3 J	0.4 J	1 J	ND	ND
17	Air (µg/m³)	PM100	NS	NS	NS	NS	NS	NS	NS	NS
17	Air (µg/m³)	PM10	12 J	ND	ASN	4 J	17 J	6 J	ND	5 J
17	Air (µg/m³)	PM4	5 J	ND	ASN	5 J	27 J	6 J	15 J	ND
17	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
17	Settled surface dust (%)	Common area	2 J	ND	ND	ND	ND	1 J	0.06 J	ND
17	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
17	Settled surface dust (%)	Residence 1	0.9 J	ND	ND	ND	0.05 J	2 J	0.05 J	0.03 J
17	Settled surface dust (%)	Residence 2	1 J	ND	ND	0.8 J	ND	1 J	ND	ND
18	Air (µg/m³)	PM100	3 J	ND	ASN	ND	ND	ND	ND	ND
18	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	3 J	ND	ND
18	Air (µg/m³)	PM4	5 J	ND	ASN	ND	ND	5 J	ND	ND
18	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
18	Settled surface dust (%)	Common area	0.9 J	ND	ND	ND	ND	ND	ND	ND
18	Settled surface dust (%)	Outdoor	7 J	ND	ND	1 J	ND	ND	0.2 J	ND
18	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	0.3 J	ND	ND
18	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	1 J	ND	ND
19	Air (µg/m³)	PM100	ND	ND	ASN	ND	ND	ND	ND	ND
19	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
19	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
19	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
19	Settled surface dust (%)	Common area	1 J	ND	ND	0.08 J	0.05 J	1 J	ND	ND
19	Settled surface dust (%)	Outdoor	5 J	ND	ND	1 J	0.6 J	1 J	0.09 J	0.04 J
19	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	1 J	ND	ND
19	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	2 J	ND	ND
20	Air (µg/m³)	PM100	3 J	ND	ASN	3 J	16 J	3 J	ND	ND
20	Air (µg/m³)	PM10	3 J	ND	ASN	3 J	16 J	4 J	ND	ND
20	Air (µg/m³)	PM4	5 J	ND	ASN	5 J	29 J	6 J	ND	ND
20	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
20	Settled surface dust (%)	Common area	ND	ND	ND	ND	ND	0.07 J	ND	0.04 J

Building Number	Sample Type	Method or Location	Quartz	Cristobalite	Tridymite	Calcite	Portlandite	Gypsum	Mica	Halite
20	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
20	Settled surface dust (%)	Residence 1	0.05 J	ND	ND	ND	ND	1 J	ND	ND
20	Settled surface dust (%)	Residence 2	0.9 J	ND	ND	0.6 J	0.09 J	1 J	ND	0.05 J
21	Air (µg/m^3)	PM100	ND	ND	ASN	ND	ND	ND	ND	ND
21	Air (µg/m^3)	PM10	R	R	R	R	R	R	R	R
21	Air (µg/m^3)	PM4	ND	ND	ASN	ND	ND	5 J	ND	ND
21	Air (µg/m^3)	PM2.5	ND	ND	ASN	ND	ND	ND	ND	ND
21	Settled surface dust (%)	Common area	0.9 J	ND	ND	ND	ND	2 J	ND	ND
21	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
21	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	ND	ND	ND
21	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	1 J	ND	ND
22	Air (µg/m^3)	PM100	13 J	ND	ASN	ND	ND	ND	ND	ND
22	Air (µg/m^3)	PM10	3 J	ND	ASN	ND	ND	ND	ND	ND
22	Air (µg/m^3)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
22	Air (µg/m^3)	PM2.5	ND	ND	ASN	ND	ND	ND	ND	ND
22	Settled surface dust (%)	Common area	14 J	ND	ND	1 J	0.4 J	ND	ND	ND
22	Settled surface dust (%)	Outdoor	26 J	ND	ND	2 J	0.8 J	0.03 J	0.07 J	ND
22	Settled surface dust (%)	Residence 1	2 J	ND	ND	0.07 J	0.08 J	1 J	ND	ND
22	Settled surface dust (%)	Residence 2	0.6 J	ND	ND	ND	ND	2 J	ND	ND
23	Air (µg/m^3)	PM100	ND	ND	ASN	ND	ND	ND	ND	ND
23	Air (µg/m^3)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
23	Air (µg/m^3)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
23	Air (µg/m^3)	PM2.5	ND	ND	ASN	ND	ND	ND	ND	ND
23	Settled surface dust (%)	Common area	2 J	ND	ND	0.04 J	0.05 J	0.9 J	ND	ND
23	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
23	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	ND	ND	ND
23	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	1 J	ND	ND
24	Air (µg/m^3)	PM100	ND	ND	ASN	ND	ND	ND	ND	ND
24	Air (µg/m^3)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
24	Air (µg/m^3)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
24	Air (µg/m^3)	PM2.5	3 J	ND	ASN	ND	ND	ND	ND	ND
24	Settled surface dust (%)	Common area	0.03 J	ND	ND	ND	ND	ND	ND	ND
24	Settled surface dust (%)	Outdoor	2 J	ND	ND	0.8 J	0.07 J	ND	0.05 J	0.04 J
24	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	ND	ND	ND
24	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	ND	ND	ND

Building Number	Sample Type	Method or Location	Quartz	Cristobalite	Tridymite	Calcite	Portlandite	Gypsum	Mica	Halite
25	Air (µg/m³)	PM100	ND	ND	ASN	ND	ND	3 J	ND	ND
25	Air (µg/m³)	PM10	R	R	R	R	R	R	R	R
25	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	4 J	ND	ND
25	Air (µg/m³)	PM2.5	ND	ND	ASN	ND	ND	3 J	ND	ND
25	Settled surface dust (%)	Common area	ND	ND	ND	ND	ND	2 J	ND	ND
25	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
25	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	ND	ND	ND
25	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	2 J	ND	ND
26	Air (µg/m³)	PM100	8 J	ND	ASN	ND	ND	ND	ND	ND
26	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
26	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
26	Air (µg/m³)	PM2.5	ND	ND	ASN	ND	ND	ND	ND	ND
26	Settled surface dust (%)	Common area	0.7 J	ND	ND	2 J	0.6 J	2 J	0.07 J	ND
26	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
26	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	ND	ND	ND
26	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	0.05 J	ND	ND
27	Air (µg/m³)	PM100	3 J	ND	ASN	ND	ND	ND	ND	ND
27	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
27	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
27	Air (µg/m³)	PM2.5	ND	ND	ASN	ND	ND	ND	ND	ND
27	Settled surface dust (%)	Common area	0.04 J	ND	ND	0.02 J	ND	0.1 J	ND	ND
27	Settled surface dust (%)	Outdoor	4 J	ND	ND	1 J	0.8 J	0.04 J	0.07 J	ND
27	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	0.6 J	ND	ND
27	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	1 J	ND	ND
28	Air (µg/m³)	PM100	3 J	ND	ASN	ND	ND	3 J	ND	4 J
28	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	3 J	ND	ND
28	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	5 J	ND	ND
28	Air (µg/m³)	PM2.5	ND	ND	ASN	ND	ND	ND	ND	ND
28	Settled surface dust (%)	Common area	ND	ND	ND	ND	ND	1 J	ND	ND
28	Settled surface dust (%)	Outdoor	8 J	ND	ND	3 J	2 J	0.3 J	0.09 J	ND
28	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	ND	ND	ND
28	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	1 J	ND	ND
29	Air (µg/m³)	PM100	4 J	ND	ASN	ND	ND	ND	ND	ND
29	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	3 J	ND	ND
29	Air (µg/m³)	PM4	19 J	ND	ASN	ND	ND	5 J	ND	ND

Building Number	Sample Type	Method or Location	Quartz	Cristobalite	Tridymite	Calcite	Portlandite	Gypsum	Mica	Halite
29	Air (µg/m³)	PM2.5	ND	ND	ASN	ND	ND	ND	ND	ND
29	Settled surface dust (%)	Common area	1 J	ND	ND	0.09 J	0.06 J	2 J	ND	ND
29	Settled surface dust (%)	Outdoor	8 J	ND	ND	3 J	2 J	2 J	0.3 J	0.07 J
29	Settled surface dust (%)	Residence 1	0.2 J	ND	ND	ND	ND	1 J	ND	ND
29	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	ND	ND	ND
30	Air (µg/m³)	PM100	NS	NS	NS	NS	NS	NS	NS	NS
30	Air (µg/m³)	PM10	3 J	ND	ASN	ND	ND	3 J	ND	ND
30	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	5 J	ND	ND
30	Air (µg/m³)	PM2.5	ND	ND	ASN	ND	ND	ND	ND	ND
30	Settled surface dust (%)	Common area	NS	NS	NS	NS	NS	NS	NS	NS
30	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
30	Settled surface dust (%)	Residence 1	1 J	ND	ND	ND	0.9 J	4 J	0.06 J	0.05 J
30	Settled surface dust (%)	Residence 2	0.6 J	ND	ND	0.4 J	0.4 J	4 J	ND	ND
Results for Individual Comparison Buildings Sampled Above 59th Street (Buildings 31–34)										
31	Air (µg/m³)	PM100	NS	NS	NS	NS	NS	NS	NS	NS
31	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	3 J	ND	ND
31	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	5 J	ND	ND
31	Air (µg/m³)	PM2.5	NS	NS	NS	NS	NS	NS	NS	NS
31	Settled surface dust (%)	Common area	1 J	ND	ND	0.03 J	0.05 J	2 J	ND	0.04 J
31	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
31	Settled surface dust (%)	Residence 1	ND	ND	ND	ND	ND	2 J	ND	ND
31	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	ND	ND	ND
32	Air (µg/m³)	PM100	ND	ND	ASN	ND	ND	3 J	ND	ND
32	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	3 J	ND	ND
32	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	5 J	ND	ND
32	Air (µg/m³)	PM2.5	ND	ND	ASN	ND	ND	3 J	ND	ND
32	Settled surface dust (%)	Common area	1 J	ND	ND	0.4 J	ND	3J	ND	ND
32	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
32	Settled surface dust (%)	Residence 1	2 J	ND	ND	0.9 J	0.08 J	4 J	0.08 J	0.4 J
32	Settled surface dust (%)	Residence 2	NS	NS	NS	NS	NS	NS	NS	NS
33	Air (µg/m³)	PM100	ND	ND	ASN	ND	ND	ND	ND	ND
33	Air (µg/m³)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
33	Air (µg/m³)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
33	Air (µg/m³)	PM2.5	ND	ND	ASN	ND	ND	ND	ND	ND
33	Settled surface dust (%)	Common area	NS	NS	NS	NS	NS	NS	NS	NS

Building Number	Sample Type	Method or Location	Quartz	Cristobalite	Tridymite	Calcite	Portlandite	Gypsum	Mica	Halite
33	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
33	Settled surface dust (%)	Residence 1	NS	NS	NS	NS	NS	NS	NS	NS
33	Settled surface dust (%)	Residence 2	1 J	ND	ND	ND	0.08 J	2 J	ND	ND
34	Air (µg/m^3)	PM100	ND	ND	ASN	ND	ND	ND	ND	ND
34	Air (µg/m^3)	PM10	ND	ND	ASN	ND	ND	ND	ND	ND
34	Air (µg/m^3)	PM4	ND	ND	ASN	ND	ND	ND	ND	ND
34	Air (µg/m^3)	PM2.5	ND	ND	ASN	ND	ND	ND	ND	ND
34	Settled surface dust (%)	Common area	ND	ND	ND	ND	ND	ND	ND	ND
34	Settled surface dust (%)	Outdoor	NS	NS	NS	NS	NS	NS	NS	NS
34	Settled surface dust (%)	Residence 1	NS	NS	NS	NS	NS	NS	NS	NS
34	Settled surface dust (%)	Residence 2	ND	ND	ND	ND	ND	3 J	ND	ND

ASN: Analytical sensitivity not available. Mineral was not detected at any measured location using the associated method, analytical sensitivity is not known.
Detect: Mineral was detected above the analytical sensitivity in at least one of the measured locations of the building using the associated method.
J: Estimated value. Due to inconsistencies during sample collection/analysis, the result is only an estimate of the actual value. The actual value could be higher or lower than the value shown.
ND: Not detected. Mineral was not detected at any measured location using the associated method.
NS: Not sampled. The associated method was not used at any of the measured locations in the building.
R: Result was rejected. Due to inconsistencies during sample collection/analysis, the result values for the sample were rejected.
µg/m^3: microgram per cubic meter of air.

Mineral Analyses in Air

Estimated levels of minerals in air for samples from 30 residential buildings (1–30) in lower Manhattan and 4 comparison residential buildings (31–34) above 59th Street are shown in the following table. The estimated air concentration of each mineral by size fraction is shown for each area sampled. Typically, samples were obtained from an outdoor area, an indoor common area, and two residences. In addition, co-located samples were obtained from some locations. However, due to inconsistencies during sample collection or analysis, the specific sampling location within the building is not noted.

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
Summary of Comparison Areas Above 59th Street										
	PM100		--	--	--	--	--	ND–3 J	--	--
	PM10		--	--	--	--	--	ND–3 J	--	--
	PM4		--	--	--	--	--	ND–5 J	--	--
	PM2.5		--	--	--	--	--	ND–3 J	--	--
Results for Individual Buildings Sampled in Lower Manhattan (Buildings 1–30)										
1	PM100	882	--	--	--	--	--	6 J	--	--
1	PM100	830	--	--	--	--	--	--	--	--
1	PM100	818	--	--	--	--	--	--	--	--
1	PM100	892	--	--	--	--	--	--	--	--
1	PM10	861	--	--	--	--	--	--	--	--
1	PM10	835	--	--	--	--	--	7 J	--	--
1	PM10	838	--	--	--	--	--	14 J	--	--
1	PM10	899	--	--	--	--	--	8 J	--	--
1	PM4	809	--	--	--	--	84 J	10 J	--	--
1	PM4	813	--	--	--	--	--	12 J	--	--
1	PM4	820	--	--	--	6 J	68 J	10 J	--	--
1	PM4	837	--	--	--	--	--	--	--	--
2	PM100	1229	--	--	--	--	--	--	--	--
2	PM100	1162	--	--	--	--	--	--	--	--
2	PM100	766	--	--	--	--	--	--	--	--
2	PM100	1240	--	--	--	--	--	--		--
2	PM10	1194	--	--	--	--	--	--	--	--
2	PM10	1168	--	--	--	--	--	--	--	--
2	PM10	1390	--	--	--	--	--	--	--	--
2	PM10	1216	--	--	--	--	--	--	--	--
2	PM4	757	--	--	--	--	--	7J	--	--
2	PM4	717	--	--	--	--	--	--	--	--
2	PM4	849	--	--	--	--	--	--	--	--

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
2	PM4	762	--	--	--	--	--	--	--	--
3	PM100	868	--	--	--	--	--	5 J	--	--
3	PM100	821	6 J	15 J	--	5 J	24 J	5 J	13 J	--
3	PM100	756	--	--	--	--	--	5 J	--	--
3	PM100	761	--	--	--	--	--	--	--	--
3	PM10	858	--	--	--	--	--	6 J	--	--
3	PM10	815	5 J	--	--	5J	25 J	5 J	--	--
3	PM10	765	--	--	--	--	--	5 J	--	--
3	PM10	783	--	--	--	--	--	--	--	--
3	PM4	814	5 J	--	--	--	--	6 J	--	--
3	PM4	824	6 J	--	--	6 J	26 J	7 J	--	--
3	PM4	841	--	--	--	--	--	5 J	--	--
3	PM4	823	--	--	--	--	--	--	--	--
4	PM100	1230	--	--	--	--	--	3 J	--	--
4	PM100	1289	4 J	--	--	4 J	16 J	3 J	9 J	5J
4	PM100	1278	--	--	--	--	--	--	--	--
4	PM100	1221	--	--	--	--	--	3 J	--	5J
4	PM10	1218	--	--	--	--	16 J	3 J	--	--
4	PM10	1415	4 J	--	--	3 J	16 J	3 J	--	4J
4	PM10	1294	--	--	--	--	--	3 J	--	--
4	PM10	1201	--	--	--	--	--	--	--	--
4	PM4	751	--	--	--	--	27J	5J	--	--
4	PM4	793	6 J	--	--	6J	28J	5J	14 J	8 J
4	PM4	804	--	--	--	--	--	5 J	--	--
4	PM4	757	--	--	--	--	--	--	--	--
5	PM100	783	--	--	--	14 J	95 J	14 J	--	14 J
5	PM100	786	--	--	--	--	--	--	--	--
5	PM100	804	--	--	--	--	--	--	--	--
5	PM100	800	--	--	--	--	--	--	--	--
5	PM10	780	--	--	--	--	--	--	--	--
5	PM10	797	--	--	--	--	--	--	--	--
5	PM10	846	--	--	--	--	--	14 J	--	--
5	PM10	789	--	--	--	--	--	--	--	--
5	PM4	817	--	--	--	--	--	--	--	--
5	PM4	664	--	--	--	--	--	--	--	--
5	PM4	813	--	--	--	--	--	9 J	--	--
5	PM4	813	--	--	--	--	--	15 J	--	--
6	PM100	1241	--	--	--	--	--	--	--	--

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
6	PM100	1212	--	--	--	--	--	--	--	--
6	PM100	1238	--	--	--	--	--	--	--	--
6	PM100	NS	NS	NS	NS	NS	NS	NS	NS	NS
6	PM10	1226	--	--	--	--	--	--	--	--
6	PM10	1197	--	--	--	--	--	--	--	--
6	PM10	1252	--	--	--	--	--	--	--	--
6	PM10	1254	--	--	--	--	--	--	--	--
6	PM4	775	--	--	--	--	--	--	--	--
6	PM4	762	--	--	--	--	--	--	--	--
6	PM4	775	--	--	--	--	--	--	--	--
6	PM4	772	--	--	--	--	--	--	--	--
7	PM100	1277	--	--	--	--	--	--	--	--
7	PM100	1260	--	--	--	8 J	54 J	10 J	--	--
7	PM100	1243	--	--	--	--	--	--	--	--
7	PM100	1213	--	--	--	--	--	--	--	--
7	PM10	1227	--	--	--	--	--	--	--	--
7	PM10	1225	--	--	--	--	--	11 J	--	--
7	PM10	1240	--	--	--	--	--	--	--	--
7	PM10	1231	--	--	--	--	--	--	--	--
7	PM4	787	--	--	--	--	--	--	--	--
7	PM4	784	--	--	--	--	--	10 J	--	--
7	PM4	765	--	--	--	--	--	11 J	--	--
7	PM4	748	--	--	--	--	--	--	--	--
8	PM100	1213	--	--	--	7 J	--	10 J	--	--
8	PM100	1254	--	--	--	--	--	6 J	--	--
8	PM100	1223	--	--	--	--	--	7 J	--	--
8	PM100	1206	--	--	--	--	--	--	--	--
8	PM100	1175	--	--	--	--	--	--	--	--
8	PM100	1259	--	--	--	--	--	--	--	--
8	PM10	1188	--	--	--	--	--	9 J	--	--
8	PM10	1223	--	--	--	--	--	6 J	--	--
8	PM10	1172	--	--	--	--	--	--	--	--
8	PM10	1256	--	--	--	--	--	--	--	--
8	PM4	757	--	--	--	--	--	12 J	--	--
8	PM4	784	--	--	--	6 J	--	10 J	--	--
8	PM4	738	--	--	--	--	--	--	--	--
8	PM4	777	--	--	--	--	--	10J	43J	19 J
9	PM100	1210	--	--	--	--	--	--	--	--
9	PM100	1218	--	--	--	--	--	3 J	--	--

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
9	PM100	NS	NS	NS	NS	NS	NS	NS	NS	NS
9	PM100	NS	NS	NS	NS	NS	NS	NS	NS	NS
9	PM10	1203	--	--	--	--	--	--	--	--
9	PM10	1217	--	--	--	4 J	--	6 J	--	--
9	PM10	1231	--	--	--	--	--	--	--	--
9	PM10	1131	--	--	--	--	--	--	--	--
9	PM4	776	--	--	--	--	--	--	--	--
9	PM4	782	--	--	--	--	--	--	--	--
9	PM4	763	--	--	--	--	--	--	--	--
9	PM4	781	--	--	--	--	--	--	--	--
10	PM100	1201	--	--	--	--	--	--	--	--
10	PM100	1225	--	--	--	--	--	--	--	--
10	PM100	1220	--	--	--	--	--	--	--	--
10	PM100	1226	--	--	--	--	--	--	--	--
10	PM10	1181	--	--	--	--	--	--	--	--
10	PM10	1202	--	--	--	--	--	--	--	--
10	PM10	1227	--	--	--	--	--	--	--	--
10	PM10	1224	--	--	--	--	--	--	--	--
10	PM4	757	--	--	--	--	--	--	--	--
10	PM4	766	--	--	--	--	--	--	--	--
10	PM4	762	--	--	--	8 J	--	--	--	--
10	PM4	767	--	--	--	--	--	--	--	--
11	PM100	NS	NS	NS	NS	NS	NS	NS	NS	NS
11	PM100	NS	NS	NS	NS	NS	NS	NS	NS	NS
11	PM100	NS	NS	NS	NS	NS	NS	NS	NS	NS
11	PM100	NS	NS	NS	NS	NS	NS	NS	NS	NS
11	PM10	1305	--	--	--	--	--	--	--	--
11	PM10	1301	--	--	--	--	--	--	--	--
11	PM10	1337	--	--	--	--	--	--	--	--
11	PM10	1237	--	--	--	--	--	--	--	--
11	PM4	832	--	--	--	--	--	--	--	--
11	PM4	806	--	--	--	--	--	--	--	--
11	PM4	834	--	--	--	--	--	--	--	--
11	PM4	779	--	--	--	--	--	--	--	--
12	PM100	NS	NS	NS	NS	NS	NS	NS	NS	NS
12	PM100	NS	NS	NS	NS	NS	NS	NS	NS	NS
12	PM100	NS	NS	NS	NS	NS	NS	NS	NS	NS
12	PM100	NS	NS	NS	NS	NS	NS	NS	NS	NS
12	PM10	1412	3 J	--	--	3 J	14 J	3 J	--	--

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
12	PM10	1315	3 J	--	--	5 J	18 J	4 J	8 J	5 J
12	PM10	1337	3 J	--	--	3 J	17 J	3 J	--	5 J
12	PM10	1553	R	R	R	R	R	R	R	R
12	PM10	1479	R	R	R	R	R	R	R	R
12	PM4	925	4 J	--	--	4 J	22 J	4 J	--	--
12	PM4	828	5 J	--	--	7 J	28 J	6 J	15 J	7 J
12	PM4	948	R	R	R	R	R	R	R	R
12	PM4	932	R	R	R	R	R	R	R	R
13	PM100	1281	--	--	--	--	--	3 J	--	--
13	PM100	1300	--	--	--	--	--	--	--	--
13	PM100	1298	--	--	--	--	--	--	--	--
13	PM100	1284	5 J	--	--	5 J	16 J	3 J	--	--
13	PM100	1211	--	--	--	--	--	--	--	--
13	PM100	1203	--	--	--	--	--	--	--	--
13	PM100	1184	--	--	--	--	--	--	--	--
13	PM10	1263	--	--	--	--	--	3 J	--	--
13	PM10	1325	4 J	--	--	5 J	16 J	3 J	--	--
13	PM10	1223	--	--	--	--	--	--	--	--
13	PM10	1205	--	--	--	--	--	--	--	--
13	PM4	802	--	--	--	5 J	--	5 J	--	--
13	PM4	818	7 J	--	--	10 J	26 J	5 J	--	--
13	PM4	762	--	--	--	--	--	--	--	--
13	PM4	761	--	--	--	--	--	--	--	--
14	PM100	1151	--	--	--	--	--	--	--	--
14	PM100	1169	--	--	--	--	--	--	--	--
14	PM100	1166	--	--	--	--	--	--	--	--
14	PM100	1142	--	--	--	--	--	--	--	--
14	PM100	1171	--	--	--	--	--	--	--	--
14	PM100	1149	--	--	--	--	--	--	--	--
14	PM10	1134	--	--	--	--	--	--	--	--
14	PM10	1138	--	--	--	--	--	--	--	--
14	PM10	1155	--	--	--	--	--	--	--	--
14	PM10	1179	--	--	--	--	--	--	--	--
14	PM10	1161	--	--	--	--	--	--	--	--
14	PM4	719	--	--	--	--	--	--	--	--
14	PM4	731	--	--	--	--	--	--	--	--
14	PM4	732	--	--	--	--	--	--	--	--
14	PM4	730	--	--	--	--	--	--	--	--
15	PM100	1219	--	--	--	--	--	--	--	--

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m³)	Cristobalite (µg/m³)	Tridymite (µg/m³)	Calcite µg/m³)	Portlandite (µg/m³)	Gypsum (µg/m³)	Mica µg/m³)	Halite (µg/m³))
15	PM100	1199	8 J	--	--	3 J	18 J	--	--	--
15	PM100	1211	--	--	--	--	--	--	--	--
15	PM100	1156	--	--	--	--	--	--	--	--
15	PM10	1218	--	--	--	--	--	3 J	--	--
15	PM10	1115	R	R	R	R	R	R	R	R
15	PM10	1212	--	--	--	--	--	--	--	--
15	PM10	1225	--	--	--	--	--	--	--	--
15	PM10	1171	--	--	--	--	--	--	--	--
15	PM4	783	--	--	--	--	--	5 J	--	--
15	PM4	778	--	--	--	--	--	--	--	--
15	PM4	766	--	--	--	--	--	--	--	--
15	PM4	751	--	--	--	--	--	--	--	--
16	PM100	1254	--	--	--	--	--	3 J	--	--
16	PM100	1225	4 J	--	--	3 J	17 J	3 J	--	--
16	PM100	1217	--	--	--	--	--	--	--	--
16	PM10	1269	--	--	--	--	--	4 J	--	--
16	PM10	1228	--	--	--	--	--	4 J	--	--
16	PM10	1210	--	--	--	--	--	--	--	--
16	PM4	808	--	--	--	--	--	7 J	--	--
16	PM4	774	--	--	--	--	--	5 J	--	--
16	PM4	769	18 J	--	--	5 J	27 J	7 J	--	--
16	PM4	769	--	--	--	--	--	--	--	--
17	PM10	1306	--	--	--	--	--	4 J	--	--
17	PM10	1469	3 J	--	--	3 J	16 J	3 J	--	4 J
17	PM10	1250	--	--	--	--	--	--	--	--
17	PM10	1259	--	--	--	--	--	3 J	--	--
17	PM10	1293	12 J	--	--	4 J	17 J	6 J	--	5 J
17	PM4	844	--	--	--	--	--	5 J	--	--
17	PM4	816	5 J	--	--	5 J	27 J	6 J	15 J	--
17	PM4	786	--	--	--	--	--	--	--	--
17	PM4	786	--	--	--	--	--	5 J	--	--
17	PM4	803	--	--	--	--	26 J	6 J	--	--
18	PM100	1277	--	--	--	--	--	--	--	--
18	PM100	1247	3 J	--	--	--	--	--	--	--
18	PM100	1241	--	--	--	--	--	--	--	--
18	PM100	1265	--	--	--	--	--	--	--	--
18	PM100	1177	--	--	--	--	--	--	--	--
18	PM10	1234	--	--	--	--	--	--	--	--
18	PM10	1269	--	--	--	--	--	--	--	--

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
18	PM10	1258	--	--	--	--	--	--	--	--
18	PM10	1268	--	--	--	--	--	--	--	--
18	PM10	1196	--	--	--	--	--	3 J	--	--
18	PM4	791	--	--	--	--	--	--	--	--
18	PM4	780	--	--	--	--	--	--	--	--
18	PM4	785	5 J	--	--	--	--	--	--	--
18	PM4	778	--	--	--	--	--	--	--	--
18	PM4	735	--	--	--	--	--	5 J	--	--
19	PM100	1275	--	--	--	--	--	--	--	--
19	PM100	1288	--	--	--	--	--	--	--	--
19	PM100	1291	--	--	--	--	--	--	--	--
19	PM100	1215	--	--	--	--	--	--	--	--
19	PM10	1270	--	--	--	--	--	--	--	--
19	PM10	1296	--	--	--	--	--	--	--	--
19	PM10	1286	--	--	--	--	--	--	--	--
19	PM10	1218	R	R	R	R	R	R	R	R
19	PM4	796	--	--	--	--	--	--	--	--
19	PM4	819	--	--	--	--	--	--	--	--
19	PM4	822	--	--	--	--	--	--	--	--
19	PM4	761	R	R	R	R	R	R	R	R
20	PM100	1278	--	--	--	--	--	3 J	--	--
20	PM100	1226	--	--	--	3 J	16 J	3 J	--	--
20	PM100	1412	--	--	--	--	--	3 J	--	--
20	PM100	1417	--	--	--	--	--	3 J	--	--
20	PM100	1366	3 J	--	--	--	--	3 J	--	--
20	PM10	1282	--	--	--	--	--	3 J	--	--
20	PM10	1226	--	--	--	3 J	16 J	--	--	--
20	PM10	1407	--	--	--	--	--	--	--	--
20	PM10	1357	3 J	--	--	3 J	--	4 J	--	--
20	PM4	792	--	--	--	--	--	6 J	--	--
20	PM4	753	5 J	--	--	5 J	29 J	5 J	--	--
20	PM4	891	--	--	--	--	--	--	--	--
20	PM4	842	5 J	--	--	5 J	--	5 J	--	--
21	PM100	1227	--	--	--	--	--	--	--	--
21	PM100	1238	--	--	--	--	--	--	--	--
21	PM100	1203	--	--	--	--	--	--	--	--
21	PM100	1218	--	--	--	--	--	--	--	--
21	PM10	1248	R	R	R	R	R	R	R	R
21	PM10	1256	R	R	R	R	R	R	R	R

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
21	PM10	1212	R	R	R	R	R	R	R	R
21	PM10	1241	R	R	R	R	R	R	R	R
21	PM4	776	--	--	--	--	--	--	--	--
21	PM4	780	--	--	--	--	--	--	--	--
21	PM4	780	--	--	--	--	--	--	--	--
21	PM4	750	--	--	--	--	--	--	--	--
21	PM4	771	--	--	--	--	--	5 J	--	--
21	PM2.5	1236	--	--	--	--	--	--	--	--
21	PM2.5	1249	--	--	--	--	--	--	--	--
21	PM2.5	1211	--	--	--	--	--	--	--	--
21	PM2.5	1238	--	--	--	--	--	--	--	--
22	PM100	1336	5 J	--	--	--	--	--	--	--
22	PM100	1385	13 J	--	--	--	--	--	--	--
22	PM100	1365	7 J	--	--	--	--	--	--	--
22	PM100	1364	--	--	--	--	--	--	--	--
22	PM100	1261	--	--	--	--	--	--	--	--
22	PM10	1346	3 J	--	--	--	--	--	--	--
22	PM10	1389	--	--	--	--	--	--	--	--
22	PM10	1361	--	--	--	--	--	--	--	--
22	PM10	1383	--	--	--	--	--	--	--	--
22	PM10	1271	--	--	--	--	--	--	--	--
22	PM4	870	--	--	--	--	--	--	--	--
22	PM4	872	--	--	--	--	--	--	--	--
22	PM4	863	--	--	--	--	--	--	--	--
22	PM4	787	--	--	--	--	--	--	--	--
22	PM2.5	1343	--	--	--	--	--	--	--	--
22	PM2.5	1334	--	--	--	--	--	--	--	--
22	PM2.5	1354	--	--	--	--	--	--	--	--
22	PM2.5	1252	--	--	--	--	--	--	--	--
23	PM100	1546	--	--	--	--	--	--	--	--
23	PM100	1626	--	--	--	--	--	--	--	--
23	PM100	1554	--	--	--	--	--	--	--	--
23	PM100	1550	--	--	--	--	--	--	--	--
23	PM10	1578	--	--	--	--	--	--	--	--
23	PM10	1596	--	--	--	--	--	--	--	--
23	PM10	1568	--	--	--	--	--	--	--	--
23	PM10	1592	--	--	--	--	--	--	--	--
23	PM10	1612	--	--	--	--	--	--	--	--
23	PM4	991	--	--	--	--	--	--	--	--
23	PM4	1012	--	--	--	--	--	--	--	--

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
23	PM4	978	--	--	--	--	--	--	--	--
23	PM4	1014	--	--	--	--	--	--	--	--
23	PM2.5	1548	--	--	--	--	--	--	--	--
23	PM2.5	1009	--	--	--	--	--	--	--	--
23	PM2.5	1544	--	--	--	--	--	--	--	--
23	PM2.5	1584	--	--	--	--	--	--	--	--
24	PM100	1467	--	--	--	--	--	--	--	--
24	PM100	1471	--	--	--	--	--	--	--	--
24	PM100	1424	--	--	--	--	--	--	--	--
24	PM100	1490	--	--	--	--	--	--	--	--
24	PM100	1485	--	--	--	--	--	--	--	--
24	PM10	1475	--	--	--	--	--	--	--	--
24	PM10	1427	--	--	--	--	--	--	--	--
24	PM10	1482	--	--	--	--	--	--	--	--
24	PM10	1481	--	--	--	--	--	--	--	--
24	PM4	920	--	--	--	--	--	--	--	--
24	PM4	891	--	--	--	--	--	--	--	--
24	PM4	880	--	--	--	--	--	--	--	--
24	PM4	929	--	--	--	--	--	--	--	--
24	PM4	920	--	--	--	--	--	--	--	--
24	PM4	935	--	--	--	--	--	--	--	--
24	PM2.5	1467	--	--	--	--	--	--	--	--
24	PM2.5	1411	3 J	--	--	--	--	--	--	--
24	PM2.5	1486	--	--	--	--	--	--	--	--
24	PM2.5	1479	--	--	--	--	--	--	--	--
25	PM100	1454	--	--	--	--	--	3 J	--	--
25	PM100	1437	--	--	--	--	--	--	--	--
25	PM100	1457	--	--	--	--	--	--	--	--
25	PM100	1451	--	--	--	--	--	--	--	--
25	PM10	1456	R	R	R	R	R	R	R	R
25	PM10	1451	R	R	R	R	R	R	R	R
25	PM10	1453	R	R	R	R	R	R	R	R
25	PM10	1458	R	R	R	R	R	R	R	R
25	PM10	1447	R	R	R	R	R	R	R	R
25	PM10	1454	R	R	R	R	R	R	R	R
25	PM4	913	--	--	--	--	--	4 J		
25	PM4	909	--	--	--	--	--	--	--	--
25	PM4	917	--	--	--	--	--	--	--	--
25	PM4	967	--	--	--	--	--	--	--	--
25	PM2.5	1431	--	--	--	--	--	3 J	--	--

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
25	PM2.5	1414	--	--	--	--	--	--	--	--
25	PM2.5	1433	--	--	--	--	--	--	--	--
25	PM2.5	1444	--	--	--	--	--	--	--	--
26	PM100	1447	--	--	--	--	--	--	--	--
26	PM100	1445	7 J	--	--	--	--	--	--	--
26	PM100	1424	--	--	--	--	--	--	--	--
26	PM100	1432	--	--	--	--	--	--	--	--
26	PM10	1453	--	--	--	--	--	--	--	--
26	PM10	1462	R	R	R	R	R	R	R	R
26	PM10	1469	--	--	--	--	--	--	--	--
26	PM10	1445	--	--	--	--	--	--	--	--
26	PM10	1429	R	R	R	R	R	R	R	R
26	PM10	1424	R	R	R	R	R	R	R	R
26	PM4	894	--	--	--	--	--	--	--	--
26	PM4	909	--	--	--	--	--	--	--	--
26	PM4	889	--	--	--	--	--	--	--	--
26	PM4	886	--	--	--	--	--	--	--	--
26	PM2.5	1449	--	--	--	--	--	--	--	--
26	PM2.5	1444	--	--	--	--	--	--	--	--
26	PM2.5	1436	--	--	--	--	--	--	--	--
26	PM2.5	1429	--	--	--	--	--	--	--	--
27	PM100	1473	--	--	--	--	--	--	--	--
27	PM100	1450	3 J	--	--	--	--	--	--	--
27	PM100	1469	--	--	--	--	--	--	--	--
27	PM100	1454	--	--	--	--	--	--	--	--
27	PM10	1467	--	--	--	--	--	--	--	--
27	PM10	1457	--	--	--	--	--	--	--	--
27	PM10	1434	--	--	--	--	--	--	--	--
27	PM10	1435	--	--	--	--	--	--	--	--
27	PM4	923	--	--	--	--	--	--	--	--
27	PM4	902	--	--	--	--	--	--	--	--
27	PM4	917	--	--	--	--	--	--	--	--
27	PM4	906	--	--	--	--	--	--	--	--
27	PM4	902	--	--	--	--	--	--	--	--
27	PM2.5	1462	--	--	--	--	--	--	--	--
27	PM2.5	1457	--	--	--	--	--	--	--	--
27	PM2.5	1458	--	--	--	--	--	--	--	--
27	PM2.5	1451	--	--	--	--	--	--	--	--
28	PM100	1427	--	--	--	--	--	3 J	--	--

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
28	PM100	1458	--	--	--	--	--	--	--	--
28	PM100	1468	3 J	--	--	--	--	--	--	4 J
28	PM100	1380	--	--	--	--	--	--	--	--
28	PM100	1346	--	--	--	--	--	--	--	--
28	PM100	1337	--	--	--	--	--	--	--	--
28	PM10	1400	--	--	--	--	--	3 J	--	--
28	PM10	1450	--	--	--	--	--	--	--	--
28	PM10	1366	--	--	--	--	--	3 J	--	--
28	PM10	1343	--	--	--	--	--	--	--	--
28	PM4	898	--	--	--	--	--	5 J	--	--
28	PM4	891	--	--	--	--	--	--	--	--
28	PM4	859	--	--	--	--	--	5 J	--	--
28	PM4	810	--	--	--	--	--	--	--	--
28	PM2.5	1396	--	--	--	--	--	--	--	--
28	PM2.5	1371	--	--	--	--	--	--	--	--
28	PM2.5	1319	--	--	--	--	--	--	--	--
28	PM2.5	1451	--	--	--	--	--	--	--	--
29	PM100	1519	--	--	--	--	--	--	--	--
29	PM100	1468	4 J	--	--	--	--	--	--	--
29	PM100	1447	--	--	--	--	--	--	--	--
29	PM10	1527	--	--	--	--	--	--	--	--
29	PM10	1481	--	--	--	--	--	--	--	--
29	PM10	1447	--	--	--	--	--	--	--	--
29	PM10	1212	--	--	--	--	--	3 J	--	--
29	PM4	927	12 J	--	--	--	--	--	--	--
29	PM4	897	19 J	--	--	--	--	--	--	--
29	PM4	887	--	--	--	--	--	5 J	--	--
29	PM4	746	--	--	--	--	--	5 J	--	--
29	PM2.5	1451	--	--	--	--	--	--	--	--
30	PM10	1307	3 J	--	--	--	--	3 J	--	--
30	PM10	1297	--	--	--	--	--	--	--	--
30	PM4	822	--	--	--	--	--	5 J	--	--
30	PM4	781	--	--	--	--	--	--	--	--
30	PM2.5	1307	--	--	--	--	--	--	--	--
Results for Individual Comparison Buildings Sampled Above 59th Street (Buildings 31–34)										
31	PM10	1346	--	--	--	--	--	--	--	--
31	PM10	1328	--	--	--	--	--	3 J	--	--
31	PM10	1347	--	--	--	--	--	--	--	--
31	PM10	1324	--	--	--	--	--	--	--	--

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
31	PM10	1371	--	--	--	--	--	--	--	--
31	PM10	1401	--	--	--	--	--	3 J	--	--
31	PM4	828	--	--	--	--	--	--	--	--
31	PM4	819	--	--	--	--	--	--	--	--
31	PM4	852	--	--	--	--	--	--	--	--
31	PM4	867	--	--	--	--	--	5 J	--	--
32	PM100	1318	--	--	--	--	--	3 J	--	--
32	PM100	1336	--	--	--	--	--	--	--	--
32	PM100	1351	--	--	--	--	--	--	--	--
32	PM100	1316	--	--	--	--	--	--	--	--
32	PM10	1312	--	--	--	--	--	3 J	--	--
32	PM10	1337	--	--	--	--	--	--	--	--
32	PM10	1317	--	--	--	--	--	--	--	--
32	PM10	1312	--	--	--	--	--	--	--	--
32	PM4	808	--	--	--	--	--	5 J	--	--
32	PM4	805	--	--	--	--	--	5 J	--	--
32	PM4	776	--	--	--	--	--	--	--	--
32	PM4	828	--	--	--	--	--	--	--	--
32	PM4	826	--	--	--	--	--	--	--	--
32	PM2.5	1311	--	--	--	--	--	3 J	--	--
32	PM2.5	1418	--	--	--	--	--	--	--	--
32	PM2.5	1315	--	--	--	--	--	--	--	--
33	PM100	1338	--	--	--	--	--	--	--	--
33	PM10	1338	--	--	--	--	--	--	--	--
33	PM4	831	--	--	--	--	--	--	--	--
33	PM4	838	--	--	--	--	--	--	--	--
33	PM2.5	1338	--	--	--	--	--	--	--	--
34	PM100	1307	--	--	--	--	--	--	--	--
34	PM100	1315	--	--	--	--	--	--	--	--
34	PM100	1309	--	--	--	--	--	--	--	--
34	PM100	1232	--	--	--	--	--	--	--	--
34	PM10	1318	R	R	R	R	R	R	R	R
34	PM10	1327	--	--	--	--	--	--	--	--
34	PM10	1238	--	--	--	--	--	--	--	--
34	PM4	816	--	--	--	--	--	--	--	--
34	PM4	848	--	--	--	--	--	--	--	--
34	PM4	830	--	--	--	--	--	--	--	--
34	PM4	782	--	--	--	--	--	--	--	--
34	PM4	770	--	--	--	--	--	--	--	--

Building Number	Particle Size Fraction	Sample Volume (L)	Quartz (µg/m^3)	Cristobalite (µg/m^3)	Tridymite (µg/m^3)	Calcite µg/m^3)	Portlandite (µg/m^3)	Gypsum (µg/m^3)	Mica µg/m^3)	Halite (µg/m^3))
34	PM2.5	1308	--	--	--	--	--	--	--	--
34	PM2.5	1348	--	--	--	--	--	--	--	--
34	PM2.5	1223	--	--	--	--	--	--	--	--

--: Not detected. Mineral was not detected above the analytical sensitivity in the associated sample.
Detect: Mineral was detected above the analytical sensitivity for the associated sample.
J: Result presented is an estimate. Due to inconsistencies during sample collection/analysis, the result is only an estimate of the actual value. The actual value could be higher or lower than the value shown.
ND: Not detected. Mineral was not detected above the analytical sensitivity in the associated sample.
NS: Not sampled. The associated method was not used at any of the measured locations in the building.
R: Result was rejected. Due to inconsistencies during sample collection/analysis, the result values for the sample were rejected.
µg/m^3: microgram per cubic meter of air.