



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

January 15, 2003

David Pian

PII

Re: World Trade Center Indoor Dust Cleaning Program
45 Wall Street **PII** Confirmation #: 0021010623

Dear Mr/Ms. Pian:

The U.S. Environmental Protection Agency (EPA) is implementing the World Trade Center Indoor Dust Cleaning Program (Program) as part of our continuing response to the collapse of the World Trade Center. As an eligible resident residing south of Canal and Pike Streets in Manhattan, you elected to participate in this program.

As a result of your request for service, contractors for the New York City Department of Environmental Protection entered your residence on 10/24/02 to perform asbestos sampling. The analytical results for the air samples were reviewed by EPA risk assessment personnel and indicate that asbestos was not found at levels exceeding EPA's risk-based clearance level of 0.0009 fibers per cubic centimeter (f/cc). This clearance level was set to protect residents from an unacceptable risk from asbestos exposure over a long-term duration. Detailed sampling results are attached.

If your building management requested testing of common areas in your building the results will be made available at a later date. EPA will be preparing community updates and fact sheets which will be made available on our website <http://www.epa.gov/wtc>. You may also visit <http://www.epa.gov/wtc/email/index.html> and request that you be notified of cleanup scheduling updates, news releases, fact sheet announcements, and other information via email.

Thank you for your cooperation and time. Should you have any questions or require additional information, please feel free to contact me at (212) 637-3133.

Andrew Confortini
Quadrant Coordinator

Asbestos Air Sampling Results for 45 Wall Street

PII

Confirmation #: 0021010623

Laboratory: EMSL

Data Validation Date: 10/28/2002

Transmission Electron Microscopy (TEM)
Analysis with Phase Contrast Microscopy
Equivalent (PCMe) Counting Method -
Description of Method:

Air is passed through a membrane filter. A transmission electron microscope (TEM) is used to identify the presence and types of fibers. The electron microscope allows identification of asbestos fibers. Only fibers identified as asbestos that are greater than 5 microns (um) are counted (100 microns is the approximate width of a human hair). This method is used to determine whether the health-based clearance criteria established for this project of 0.0009 fibers/cubic centimeter of air is met. The method is also used as an alternative method of determining compliance with the Occupational Safety and Health Administration (OSHA) standard for workers of 0.1 fibers/cubic centimeter of air.

Sample	Location	Date	Volume (L)	Area Analyzed (sq.mm)	Non-Asbestos Fibers	Asbestos Type	Asbestos Fibers > 5 um	Analytical Sensitivity (fibers/cc)	Asbestos Concentration (fibers/cc)
10623-297-1511	Living Room	10/24/02	3,712.5	0.2000	9.0	Not Detected	0.0	0.0005	<0.0005
10623-297-1512	Dining Room	10/24/02	3,693.8	0.2000	8.0	Not Detected	0.0	0.0005	<0.0005
10623-297-1513	Kitchen	10/24/02	3,712.5			Not Analyzed	0.0		
10623-297-1514	Bedroom	10/24/02	3,693.8	0.2000	0.0	Not Detected	0.0	0.0005	<0.0005
10623-297-1515	Bathroom	10/24/02	3,712.5			Not Analyzed	0.0		
10623-297-1516	Kitchen2	10/24/02	3,731.3	0.2000	8.0	Not Detected	0.0	0.0005	<0.0005

Key:

Sample	Identification number assigned to the sample.
Location	Location in the apartment where the sample was collected.
Date	Date the sample was collected.
Volume (L)	Volume of air drawn across the filter in liters.
Area Analyzed (sq.mm)	Area of the filter which was analyzed in square millimeters.
Non-Asbestos Fibers	Number of non-asbestos fibers which were detected. Other fibers types include fibrous glass, mineral wool, cellulose and fabric fibers.
Asbestos Type	Type of asbestos detected. Types include chrysotile, crocidolite, amosite, anthophyllite, tremolite, or actinolite. Overload indicates that a sample could not be analyzed because more than 25% of the filter contained excess particulate matter.
Asbestos Fibers > 5 um	Number of asbestos fibers detected greater than (>) 5 microns in length.
Analytical Sensitivity (fibers/cc)	Lowest value the analytical method can detect. This value is below the clearance criteria of 0.0009 f/cc.
Asbestos Concentration (fibers/cc)	Estimated number of asbestos fibers greater than 5 microns detected per cubic centimeter of air. This is the value that is compared to the health-based clearance criteria of 0.0009 f/cc.

The last column of the table above, labeled Asbestos Concentration (fibers/cc), contains the data which was compared to the health-based clearance criteria of 0.0009 f/cc. The health-based clearance criteria represents an asbestos concentration in air that is associated with negligible adverse health effects over a 30-year exposure period. Sampling results which are equal to or below this value are considered to meet the clearance criteria. Sampling results which are above this value are considered to exceed the clearance criteria and will result in a recommendation to clean and test the apartment again. If one or more sample is overloaded, it will be recommended to clean and test the apartment again. If a sample is reported to be less than (<) the analytical sensitivity it means that not only are you below the health-based clearance criteria, but you are also below the detection limit for the method.

In addition to the analysis of the samples using the TEM PCMe counting method for determining if the clearance criteria was met, two additional analyses were done to provide additional data. The second is similar to the TEM PCMe counting method with the exception that all asbestos fibers greater than (>) 0.5 microns are counted. Although the scientific data indicates that the long fibers (greater than 5 microns in length) are the most important from a long-term health perspective, the standard protocol for determining asbestos cleanup for schools counts asbestos fibers greater than 0.5 microns. For comparison, we collected this information also. The third analytical method, PCM, counts all fibers, which include asbestos, fibrous glass, mineral wool, cellulose and fabric fibers, greater than (>) 5 microns. As there was a significant amount of fibrous glass associated with the World Trade Center collapse, we also wanted to provide data on total fibers. In general, if the TEM PCMe and the TEM analyses indicated that one or a few asbestos fiber the other fibers as detected by the PCM measurement are fibrous glass, mineral wool, cellulose or fabric fibers. The results of these analyses are listed on the next page.

Laboratory: EMSL**Data Validation Date: 10/28/2002****Transmission Electron Microscopy (TEM)
with AHERA Counting Method - Description
of Method**

Air is passed through a membrane filter. A transmission electron microscope is used to identify the presence and types of fibers. It is capable of detecting and identifying fibers as small as 0.2 microns (um). All asbestos fibers greater than (>) 0.5 um are counted as per AHERA counting methods for school reentry. This method is used to determine the concentrations of both long and short fibers in the air that may impact health. This is the method used under EPA standards to determine whether an asbestos clean up project has left behind residual contamination. The standard for school clean ups is 0.022 fibers/ cubic centimeter, as converted from 70 structures/sq.mm based on a sample volume of 1200 liters.

Sample	Location	Date	Volume (L)	Area Analyzed (sq.mm)	Non-Asbestos Fibers	Asbestos Type	Asbestos Fibers>0.5um	Analytical Sensitivity (fibers/cc)	Asbestos Concentration	
									(fibers/sq.mm)	(fibers/cc)
10623-297-1511	Living Room	10/24/02	3,712.5	0.2000	9.0	Not Detected	0.0	0.0005	<5.00	<0.0005
10623-297-1512	Dining Room	10/24/02	3,693.8	0.2000	8.0	Not Detected	0.0	0.0005	<5.00	<0.0005
10623-297-1513	Kitchen	10/24/02	3,712.5			Not Analyzed	0.0			
10623-297-1514	Bedroom	10/24/02	3,693.8	0.2000	0.0	Not Detected	0.0	0.0005	<5.00	<0.0005
10623-297-1515	Bathroom	10/24/02	3,712.5			Not Analyzed	0.0			
10623-297-1516	Kitchen2	10/24/02	3,731.3	0.2000	8.0	Not Detected	0.0	0.0005	<5.00	<0.0005

Key:

Sample	Identification number assigned to the sample.
Location	Location in the apartment where the sample was collected.
Date	Date the sample was collected.
Volume (L)	Volume of air drawn across the filter in liters.
Area Analyzed (sq.mm)	Area of the filter which was analyzed in square millimeters.
Non-Asbestos Fibers	Number of non-asbestos fibers which were detected. Other fiber types include fibrous glass, mineral wool and fabric fibers.
Asbestos Type	Type of asbestos detected. Types include chrysotile, crocidolite, amosite, anthophyllite, tremolite, or actinolite. Overload indicates that a sample could not be analyzed because more than 25% of the filter contained excess particulate matter. Not Analyzed indicates the filter was damaged or otherwise unable to be analyzed.
Asbestos Fibers>0.5um	Number of asbestos fibers detected that were greater than (>) 0.5 microns in length.
Analytical Sensitivity (fibers/cc)	Lowest value the analytical method can detect.
Asbestos Concentration (fibers/sq.mm)	Estimated number of asbestos fibers greater than (>) 0.5 microns detected per millimeter squared.
Asbestos Concentration (fibers/cc)	Estimated number of asbestos fibers greater than (>) 0.5 microns detected per cubic centimeter of air.

NOTE: AHERA results are generally reported in units of structures/cubic centimeter of air. Structures and fibers are generally interchangeable terms and for this evaluation results are reported as fibers/cubic centimeter of air.

Laboratory: EMSL**Data Validation Date: 10/28/2002****Phase Contrast Microscopy (PCM) -
Description of Method:**

Air is passed through a membrane filter. A Light microscope is used to identify the presence and types of fibers in the air. The fibers are stained to help in their identification. This method cannot identify fibers smaller than 1um, nor can it accurately identify different types of fibers. This is the method used by OSHA to determine compliance with its standard for workers of 0.1 fibers/ cubic centimeter of air. PCM measurements are also used as an alternative for AHERA compliance when TEM analysis is not available. The alternative AHERA criteria for PCM is 0.01 f/cc.

Sample	Location	Date	Volume (L)	Total Fibers	Limit of Detection (f/cc)	Concentration Fibers/sq.mm	Concentration Fibers/cc
10623-297-1511	Living Room	10/24/02	3,712.5	8.0	0.001	10.19	0.0010
10623-297-1512	Dining Room	10/24/02	3,693.8	11.0	0.001	14.01	0.0010
10623-297-1513	Kitchen	10/24/02	3,712.5		0.0		Not Analyzed
10623-297-1514	Bedroom	10/24/02	3,693.8	4.0	0.001	<7.0	<0.001
10623-297-1515	Bathroom	10/24/02	3,712.5		0.0		Not Analyzed
10623-297-1516	Kitchen2	10/24/02	3,731.3	5.0	0.001	<7.0	<0.001

Key:

Sample	Identification number assigned to the sample.
Location	Location in the apartment where the sample was collected.
Date	Date the sample was collected.
Volume (L)	Volume of air drawn across the filter in liters.
Total Fibers	Total fibers detected greater than 1 micron in length. Fiber types may consist of asbestos, fibrous glass, mineral wool, or fabric fibers.
Limit of Detection (f/cc)	Lowest value the analytical method can detect.
Fibers/sq.mm	Estimated number of fibers greater than 1 micron detected per millimeter squared.
Fibers/cc	Estimated number of fibers greater than 1 micron detected per cubic centimeter of air. Overloaded indicates that a sample could not be analyzed because more than 25% of the filter contained excess particulate matter.