NYC 9/11 Public Portal Document

TRIBECA TOWER
105 DUANE STREET

A SUMMARY REPORT OF AMBIENT AIR SAMPLING AND VISUAL OBSERVATIONS PERFORMED FOLLOWING THE COLLAPSE OF THE WORLD TRADE CENTER BUILDINGS.

BOOK TWO

FEBRUARY 11, 2002

PREPARED FOR:
RELATED MANAGEMENT COMPANY, L.P.
203 EAST 86TH STREET
NEW YORK, NY 10028

PREPARED BY:
ATC ASSOCIATES INC.
104 EAST 25TH STREET
NEW YORK, NY 10010

NYC-WTC_000104321

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

H | A
11 0

October 26, 2001

ATC Associates Inc.
104 East 25th Street
New York, NY 10010
Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 5770:

Client: Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: Hallways
Samples received: 10/26/01

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites. As indicated on the attached Summary Results sheet, no asbestos structures were detected in any of the eleven ambient samples submitted from the site. MMI TEM cassettes, Lot No. 98116617, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. If post-abatement inside samples pass, the response action may be considered to have been completed. The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc. Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC ENVIRONMENTAL, INC.
104 East 25th Street
New York, NY 10010

APPROVED NY STATE DOH ELAP # 10879
ACCREDITED NVLAP Lab Code # 1187

Summary of TEM Results

ATC Associates Inc.
104 East 25th Street
New York, NY 10010
Mr. Fred Burkhardt

DATE: 10/26/01

Project/Site Identification: Tribeca Towers, 105 Duane St., NY, NY
Hallways

CONCLUSION:

STATISTICAL SUMMARY

1) Inside Samples

TEM#	Project #	Volume(l)	Asbestos Concentration S/mm^2	S/cc	ngm/m^3
5770- 62555	H-1	1300	0.0	0.0044 *	
5770- 62556	H-2	1300	0.0	0.0044 *	
5770- 62557	H-3	1300	0.0	0.0044 *	
5770- 62558	H-4	1300	0.0	0.0044 *	
5770- 62559	H-5	1300	0.0	0.0044 *	
5770- 62560	H-6	1300	0.0	0.0044 *	
5770- 62561	H-7	1300	0.0	0.0044 *	
5770- 62562	H-8	1300	0.0	0.0044 *	
5770- 62563	H-9	1300	0.0	0.0044 *	
5770- 62564	H-10	1300	0.0	0.0044 *	
5770- 62565	H-11	1300	0.0	0.0044 *	
		Average=	0.0	0.0044	0

2) Outside Samples

TEM#	Project #	Volume(l)	Asbestos Concentration S/mm^2	S/cc	ngm/m^3
		Average=	N/A	N/A	N/A

3) Blanks

TEM#	Project #		Asbestos Concentration S/mm^2	S/cc	ngm/m^3
		Average=	N/A	N/A	N/A

4) Value of T - Statistic : N/A

* None detected; concentration equivalent to analytical sensitivity assigned.

This test report relates only to the specific items cited in the analysis.
The analysis was carried out according to the approved TEM method. The laboratory is in compliance with the quality specified for the method.

This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

MP
Analyzed by:
Marek Peysakhov

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Hallways

Date Received: 10/26/01

Project Sample No.: H-1

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5770 - 62555

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM - ıod.
This laboratory is in compliance with the quality specified f ethod.

Analyzed by:

Marek Peysakhov

Report Revie

Michael A. Go:
Director of El

orig

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Hallways

Date Received: 10/26/01

Project Sample No.: H-2

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5770 - 62556

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Hallways

Date Received: 10/26/01

Project Sample No.: H-3

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5770 - 62557

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Hallways

Date Received: 10/26/01

Project Sample No.: H-4

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5770 - 62558

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Hallways

Date Received: 10/26/01

Project Sample No.: H-5

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5770 - 62559

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Hallways

Date Received: 10/26/01

Project Sample No.: H-6

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5770 - 62560

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Hallways

Date Received: 10/26/01

Project Sample No.: H-7

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5770 - 62561

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Hallways

Date Received: 10/26/01

Project Sample No.: H-8

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5770 - 62562

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52 No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Hallways

Date Received: 10/26/01

Project Sample No.: H-9

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5770 - 62563

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Hallways

Date Received: 10/26/01

Project Sample No.: H-10

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5770 - 62564

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Hallways

Date Received: 10/26/01

Project Sample No.: H-11

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5770 - 62565

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5770 - 10/26/01

Lab Sample No. 62555
Client Spl. No. H-1
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. U137
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator
Disk No.
Comments
(4.721 Struct. Corspd. to 70 s/mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	C8	N50											
2	D8	— ✓											
3	V8	— ✓											
4	O1	— ✓											
5	H1	— ✓											
6	M1	— ✓											

Orig

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEC\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5770 - 10/26/01

Lab Sample No. 62556
Client Spl No. H-2
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. C 8 7
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator LCP
Disk No.
Comments
(4,721 Struct Corspd. to 70 s mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	38	NSD											
2	58	—											
3	78	—											
4	22	—											
5	22	—											
6	22	—											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

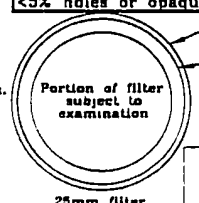
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>30 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5770 - 10/26/01

Lab Sample No. 62557
Client Spl. No. H-3
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 787
(GO) Area 0.11124 mm^2
No. GO to be Analyzed 5

Operator [illegible]
Disk No.
Comments
1.4.721 Struct. Corspd. to 70 s/mm^2.)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	A1	ASO											
2	D1	— "											
3	E1	— "											
4	F1	— "											
5	K1	— "											
6	R1	— "											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

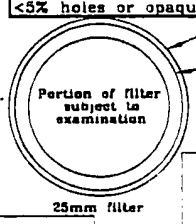
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAE GROUP #: 5770 - 10/26/01

Lab Sample No. 52559
Client Spl. No. H-4
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 5 27
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 5

Operator CCC
Disk No.
Comments
(4.721 Struct. Corspd. to 70 s mm^2.

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	C3	NSO											
2	H3	– ✓											
3	H3	– ✓											
4	G2	– ✓											
5	C9	– ✓											
6	D8	– ✓											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.

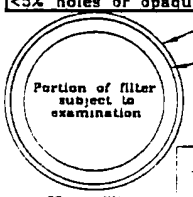
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.

For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5770 - 10/26/01

Lab Sample No. 62559
Client Spl No. H-5
Instrument I.D. EM 10 CRX
Screen Magnification 15,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D 48
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator CCC
Disk No.
Comments
(4.721 Struct. Corspd. to 70 s/mm^2)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	D1	NSD											
2	C7	--											
3	A1	—											
4	E9	—											
5	J8	—											
6	A9	—											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

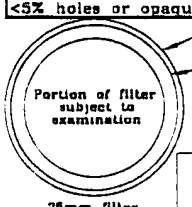
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections. 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5770 - 10/26/01

Lab Sample No. 62560
Client Spl. No. H-6
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. CAS 7
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator LLP
Disk No.
Comments
(4.721 Struct. Corspd to 70 s/mm^2.

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	C1	NSD											
2	A1	— "											
3	A1	— "											
4	C1	— "											
5	C1	— "											
6	A1	— "											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

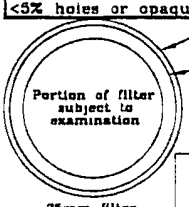
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP # 5770 - 10/26/01

Lab Sample No. 62561
Client Spl. No. H-7
Instrument I.D EM 10 CRX
Screen Magnification 15,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 48 7
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator [illegible]
Disk No.
Comments
(4.721 Struct. Corspd. to 70 s/mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	Ambig./ND	N or ✓	EDS (Nonasb. Elements)
1	U2	NSD												
2	R2	—												
3	L2	—												
4	X8	—												
5	Q8	—												
6	J8	—												

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.

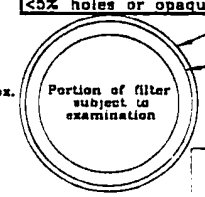
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.

For amphiboles: 0.53nm layer line repeat, and approx. 3.3 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5770 - 10/26/01

Lab Sample No. 62562
Client Spl. No. H-3
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. CP8 7
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator CCP
Disk No.
Comments
4 721 Struct Corspd to 70 s/mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	J8	NSD											
2	K8	— "											
3	K8	— "											
4	Y1	— "											
5	R1	— "											
6	K1	— "											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

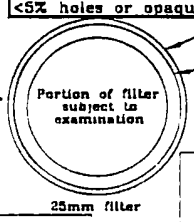
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5770 10/26/01

Lab Sample No. 62563
Client Spl. No. H-9
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. U & 7
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator LLP
Disk No.
Comments
4.721 Struct. Corspd to 70 s mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	E3	NSD											
2	J3	— "											
3	Q3	— "											
4	J3	— "											
5	Q3	— "											
6	X3	— "											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

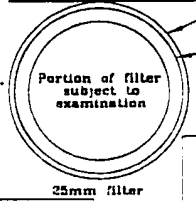
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5770 - 10/26/01

Lab Sample No. 62564
Client Spl. No. H-10
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. [illegible]
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator [illegible]
Disk No.
Comments
(4.721 Struct. Corspd. to 70 s/mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	C8	A5											
2	A8	—											
3	A7	—											
4	E1	—											
5	A1	—											
6	D1	—											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

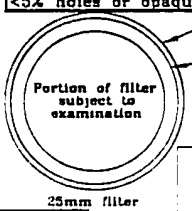
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections. 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEC\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #. 5770 - 10/26/01

Lab Sample No. 62565
Client Spl. No H-11
Instrument I.D EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 487
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator
Disk No.
Comments
(4.721 Struct. Corspd to 70 s/mm^2.)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	F3	NSD											
2	K3	–											
3	K3	–											
4	J3	–											
5	Q3	–											
6	X3	–											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

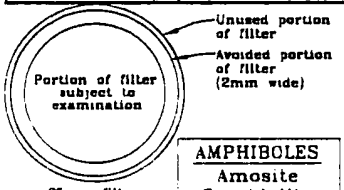
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

NYC-WTC_000104346

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address	3a. Task #	4a. Air Sampler:	

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
		Cassette/Filter Manufacture _____ Lot # _____	Cassette/Filter Manufacture _____ Lot # _____	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
H-7		✓		Hallway 29 FC	[illegible]	1915	[illegible]	10	10	10	300		
H-8		✓		Hallway 33 FC	[illegible]	1940	120	10	10	10	120		
H-4		✓		Hallway 30 FC	1930	1940	120	10	10	10	120		
H10		✓		Hallway 29 FC	1925	1945	120	10	10	10	120		
H 11		✓		Hallway 28 FC	1940	1950	120	10	10	10	120		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I			
II	[illegible]	10/26/01	8 am
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name:	23. Date:	24. Time:
a. Analyzed By:		
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

26. ATC Project Manager:

27. Result To: _____
Beeper/Phone #'s _____

28. Comments:

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File **YELLOW** - Client/Report **PINK** - Lab **GOLDENROD** - Field

NY-1 (1/01)

NYC-WTC_000104347

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address	3a. Task #	4a. Air Sampler:	

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE) Cassette/Filter Manufacture _____ Lot # _____	8. ☐ TEM (0.45 micron MCE) Cassette/Filter Manufacture _____ Lot # _____	9. Type: a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I			
II			
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name:	23. Date:	24. Time:
a. Analyzed By:		
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager:

27. Result To: _____
Beeper/Phone #'s _____

28. Comments:

WHITE - File **YELLOW** - Client/Report **PINK** - Lab **GOLDENROD** - Field

NY-1 (1/01)

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

H/A
O/29

October 26, 2001

ATC Associates Inc.
104 East 25th Street
New York, NY 10010
Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 5771:

Client: Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: Various Sites
Samples received: 10/26/01

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites. As indicated on the attached Summary Results sheet, less than 70 asbestos structures per mm^2 was detected in all of the twenty-nine ambient samples submitted from the site. MMI TEM cassettes, Lot No. 98116617, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. If post-abatement inside samples pass, the response action may be considered to have been completed. The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc. Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC ENVIRONMENTAL, INC.
104 East 25th Street
New York, NY 10010

APPROVED NY STATE DOH ELAP # 10872
ACCREDITED NVLAP Lab Code # 1187

Summary of TEM Results

ATC Associates Inc.
104 East 25th Street
New York, NY 10010
Mr. Fred Burkhardt

DATE: 10/26/01

Project/Site Identification: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

CONCLUSION:

STATISTICAL SUMMARY

1) Inside Samples

TEM#	Project #	Volume(l)	Asbestos Concentration S/mm^2	S/cc	ngm/m^3
5771- 62566	01	1300	0.0	0.0044 *	
5771- 62567	02	1300	0.0	0.0044 *	
5771- 62568	03	1300	0.0	0.0044 *	
5771- 62569	04	1300	0.0	0.0044 *	
5771- 62570	05	1300	0.0	0.0044 *	
5771- 62571	06	1300	0.0	0.0044 *	
5771- 62572	07	1300	0.0	0.0044 *	
5771- 62573	08	1300	0.0	0.0044 *	
5771- 62574	10	1300	14.8	0.0044	
5771- 62575	11	1300	0.0	0.0044 *	
5771- 62576	12	1300	0.0	0.0044 *	
5771- 62577	13	1300	0.0	0.0044 *	
5771- 62578	14	1300	0.0	0.0044 *	
5771- 62579	15	1300	0.0	0.0044 *	
5771- 62580	16	1300	0.0	0.0044 *	
5771- 62581	17	1300	0.0	0.0044 *	
5771- 62582	18	1300	0.0	0.0044 *	
5771- 62583	19	1300	0.0	0.0044 *	
5771- 62584	20	1300	0.0	0.0044 *	
5771- 62585	21	1300	0.0	0.0044 *	
5771- 62586	22	1300	0.0	0.0044 *	
5771- 62587	23	1300	0.0	0.0044 *	
5771- 62588	24	1300	0.0	0.0044 *	
5771- 62589	25	1300	0.0	0.0044 *	
5771- 62590	26	1300	0.0	0.0044 *	
5771- 62591	27	1300	0.0	0.0044 *	
5771- 62592	28	1300	0.0	0.0044 *	
5771- 62593	29	1300	0.0	0.0044 *	
5771- 62594	30	1300	0.0	0.0044 *	
		Average=	0.5	0.0044	5

2) Outside Samples

TEM#	Project #	Volume(l)	Asbestos Concentration S/mm^2	S/cc	ngm/m^3
		Average=	N/A	N/A	N/A

3) Blanks

TEM#	Project #	Asbestos Concentration S/mm^2	S/cc	ngm/m^3
5771- 62595	B-1	- - - - - - - - -	Not Analyzed	- - - - - - - - -
5771- 62596	B-2	- - - - - - - - -	Not Analyzed	- - - - - - - - -
5771- 62597	B-3	- - - - - - - - -	Not Analyzed	- - - - - - - - -
5771- 62598	B-4	- - - - - - - - -	Not Analyzed	- - - - - - - - -
5771- 62599	B-5	- - - - - - - - -	Not Analyzed	- - - - - - - - -

Average=	N/A	N/A	N/A

4) Value of T - Statistic : N/A

* None detected; concentration equivalent to analytical sensitivity assigned

---

This test report relates only to the specific items cited in the analysis.
The analysis was carried out according to the approved TEM method. The laboratory is in compliance with the quality specified for the method.

This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

MP

Analyzed by:
Marek Peysakhov

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

NYC 9/11 Public Portal Document

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763) Vol. 52 No. 210 October 30 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 01

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62566

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 02

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62567

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 03

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62568

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 04

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62569

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule. EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 05

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62570

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 06

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62571

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 07

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62572

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 08

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62573

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 10

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62574

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	1	0	0	0	1	0	14.8	0.0044	145
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					1	0	14.8	0.0044	145
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					1	0	14.8	0.0044	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763) Vol 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 11

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62575

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 12

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62576

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 13

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62577

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 14

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62578

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 15

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 52579

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 16

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62580

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 17

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62581

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 18

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62582

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 19

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62583

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

NYC 9/11 Public Portal Document

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 20

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62584

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 21

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62585

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 22

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62586

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 23

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62587

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763) Vol 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 24

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62588

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 25

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62589

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 26

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62590

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 27

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62591

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 28

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62592

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 29

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62593

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air nqm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Environmental, Inc.
104 East 25th Street
New York, New York 10010

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 10/26/01

ASBESTOS FIBER ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM)

With Fiber Identification by Selected-Area Electron Diffraction (SAED) and Energy-Dispersive X-RAY Spectroscopy (EDS)
Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763) Vol 52, No. 210, October 30, 1987

Sample Identification

Project/Site: Tribeca Towers, 105 Duane St., NY, NY
Various Sites

Date Received: 10/26/01

Project Sample No.: 30

Air Volume: 1300 liters

Filter Type: MCE 25 mm diam., Pore Size: 0.45 um
Effective Area: 385 mm2

Analysis Parameters

TEM Sample No.: 5771 - 62594

Grid Openings Analyzed: 6

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0674 mm2

Analytical Sensitivity: 14.8 s/mm2
0.0044 s/cc

FIBROUS PARTICULATES ANALYZED

	Number Observed						CONCENTRATION		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total. Struct.	Total Struct. >=5um	Filter Struct/mm2	Filter Struct/cc	Air ngm/m3
Chrysotile Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Amphibole Asbestos	0	0	0	0	0	0	0.0	0.0000	0
Ambiguous	0	0	0	0	0	0	0.0	0.0000	0
Total asbestos (includes ambiguous structures)					0	0	0.0	0.0000	0
Non-Asbestos	0	0	0	0	0	0	0.0	0.0000	N/A
No Identification	0	0	0	0	0	0	0.0	0.0000	N/A
Totals (All Structures)					0	0	0.0	0.0000	N/A

The estimated uncertainty of this analysis is 1 standard deviation.

Non-asbestos fiber i.d. (EDS/SAED): None detected
Amphibole Asbestos Type: None detected

The Analysis was carried out in accordance with the approved TEM method.
This laboratory is in compliance with the quality specified for the method.

Analyzed by:

Marek Peysakhov

Report Reviewed by:

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP # 5771 - 10 06/01

Lab Sample No 62566 | Filter Type MCE 25 mm | Operator [illegible]

Client Spl No. 01 | Filter Area 385 mm^2

Instrument I.D. EM 10 CRX | Grid I.D [illegible] | Disk No.

Screen Magnification 16,400X | (GO) Area 0.01124 mm^2 | Comments

Acc. Voltage 80 kV | No. GO to be Analyzed 6 | (4.731 Struct. Corspd. to 70 s/mm^2.)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure N or ✓ Chrys.	Amphibole	Nonasb.	Ambig./ND	EDS (Nonasb. Elements)
1	[illegible]	[illegible]											
2.	[illegible]	—											
3	[illegible]	—											
4	[illegible]	—											
5	[illegible]	—											
6	[illegible]	—											

Photo No. (from 1 in 5 asbestos-containing samples) — Identify all structures using EDS — Check diffraction for asbestos structures up to 70s/mm² (1st 4) — Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

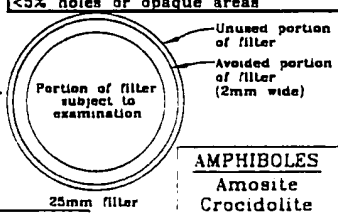
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62567
Client Spl. No. 02
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D 4838
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator
Disk No.
Comments
4,721 Struct. Corspd. to 70 s/mm^2.

	GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure N or ✓ Chrys.	Amphibole	Nonasb.	Ambig./ND	EDS (Nonasb. Elements)
	1	F4	NSD											
E	2	K4	—											
	3	R4	—											
	4	F7	—											
6	5	K7	—											
	6	R7	—											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

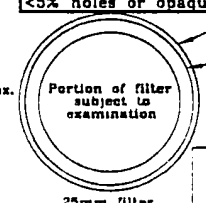
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62568
Client Spl. No. 03
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 4 X 8
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator
Disk No.
Comments
4,731 Struct. Corspd. to 70 s/mm^2.

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure N or ✓ Chrys.	Amphibole	Nonasb.	Ambig./ND	EDS (Nonasb. Elements)
1	C7	1.150											
2	H7	—											
3	N7	—											
4	E9	—											
5	J9	—											
6	O9	—											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

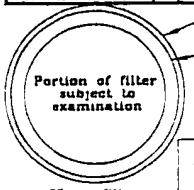
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62569
Client Spl. No. 04
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. [illegible]
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator [illegible]
Disk No.
Comments
[illegible] 4.721 Struct. Corspd. to 70 s/mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	X8	NSD											
2	Q8	—											
3	J8	—											
4	X8	—											
5	Q8	—											
6	J8	—											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

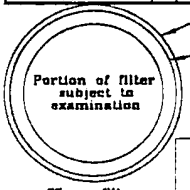
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62570
Client Spl. No 05
Instrument I.D EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. C8X
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator
Disk No
Comments
4.721 Struct. Corsed. 33.72 s/mm^2.

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	B8	NSD											
2	E8	—											
3	J8	—											
4	K1	—											
5	R1	—											
6	V1	—											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.

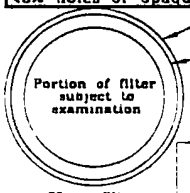
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.

For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filler, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No 62571
Client Spl. No. 06
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D [illegible]
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator [illegible]
Disk No.
Comments
4,721 Struct. Corsnd. to 70 s/mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	E9	NSD											
3A 2	J8	– ✓											
3	G8	– ✓											
4	E7	– ✓											
3C 5	H7	– ✓											
6	H7	– ✓											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

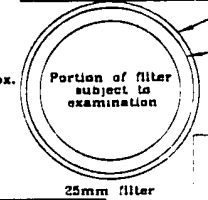
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10.26.01

Lab Sample No. 62572
Client Spl No. 07
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 6188
'GO' Area 0.01124 mm^2
No. GO to be Analyzed 5

Operator [illegible]
Disk No.
Comments
(4 721 Struct. Corspd to 70 s/mm^2.

	GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
	1	D1	NSD											
3E	2	E1	— ✓											
	3	A1	— ✓											
	4	F1	— ✓											
3J	5	K1	— ✓											
	6	C1	— ✓											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62573
Client Spl No. 08
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D CRS
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator
Disk No
Comments
4 721 Struct. Corspd to 70 s/mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	F1	NSD											
2	K1	—											
3	R1	—											
4	D8	—											
5	C8	—											
6	P8	—											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

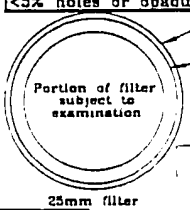
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



25mm filter

Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10 26 01

Lab Sample No. 62574
Client Spl. No. 10
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 7 X 8
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator [illegible]
Disk No.
Comments
1 4.721 Struct. Corspd. to 70 s/mm^2.

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure N or ✓ Chrys.	Amphibole	Nonasb.	Ambig./ND	EDS (Nonasb. Elements)
1	E9	1	✓				✓		✓				
2	J9	NSD											
3	A8	— ✓											
4	V8	— ✓											
5	D6	— ✓											
6	E6	— ✓											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

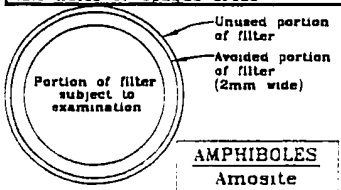
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile	1				
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No 62875
Client Spl. No 11
Instrument I.D EM 10 CRK
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 4 & 5
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator
Disk No.
Comments
Total Struct. Counted to 70 s mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	E1	N/S											
2	K1	–											
3	K1	–											
4	C1	–											
5	H1	–											
6	N1	–											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

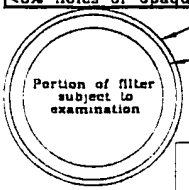
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEC\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP # [illegible]

Lab Sample No. 62874 | Filter Type MCE 25 mm | Operator [illegible]

Client Spl No 12 | Filter Area 385 mm^2

Instrument I.D. EM 10 CRX | Grid I.D. 4 & 5 | Disk No

Screen Magnification 16,400X | (GO) Area 0.01124 mm^2 | Comments

Acc. Voltage 80 kV | No. GO to be Analyzed 5 | [illegible] Struct. Corspd to 70 s mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	V1	NSD											
2	R1	— "											
3	K1	— "											
4	F1	— "											
5	K1	— "											
6	R1	— "											

Photo No. (from 1 in 5 asbestos-containing samples) | Identify all structures using EDS | Check diffraction for asbestos structures up to 70s/mm (1st 4) | Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.

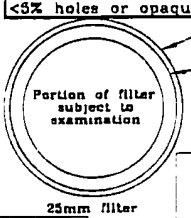
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.

For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP # [illegible]

Lab Sample No. 62577 | Filter Type MCE [illegible] mm | Operator [illegible]

Client Spl No. 13 | Filter Area 385 mm^2

Instrument I.D. EM [illegible] | Grid I.D. [illegible] | Disk No.

Screen Magnification 16,400X | (GO) Area 0.01124 mm^2 | Comments

Acc. Voltage 80 kV | No. GO to be Analyzed 6 | 4,721 Struct. Corspd. to 70 s/mm^2

	GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
	1	Z1	NSD											
5E	2	P1	—											
	3	W1	—											
	4	X2	—											
5G	5	Q2	—											
	6	J2	—											

Photo No. (from 1 in 5 asbestos-containing samples) | Identify all structures using EDS | Check diffraction for asbestos structures up to 70s/mm (1st 4) | Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 10/26/01

Lab Sample No 62578
Client Spl. No. 14
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. CRX
'GO' Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator (illegible)
Disk No.
Comments
[4,721 Struct. Corspd. to 70 s/mm^2]

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure N or ✓ Chrys.	Amphibole	Nonasb.	Ambig./ND	EDS (Nonasb. Elements)
1	F1	N30											
2	K1	— ✓											
3	R1	— ✓											
4	Y7	— ✓											
5	R7	— ✓											
6	K7	— ✓											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

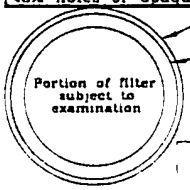
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP # 5771 - 11/26/01

Lab Sample No 60579 | Filter Type MCE 25 mm | Operator [illegible]

Client Spl. No. 15 | Filter Area 385 mm^2

Instrument I.D. EM 10 CRX | Grid I.D. [illegible] | Disk No.

Screen Magnification 16,400X | (GO) Area 0.01104 mm^2 | Comments

Acc. Voltage 80 kV | No GO to be Analyzed 6 | 4,731 Struct. Corsod. to 70.5 mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	[illegible]	NSD											
2	[illegible]	— "											
3	[illegible]	— "											
4	[illegible]	— "											
5	[illegible]	— "											
6	[illegible]	— "											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.

For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.

For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADDYEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 52580
Client Spl. No. 16
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 4 SS
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator LLP
Disk No.
Comments
(4.721 Struct. Corspd. to 70 s mm^2.)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure N or ✓ Chrys.	Amphibole	Nonasb.	Ambig./ND	EDS (Nonasb. Elements)
1	D1	0150											
2	E1	— ✓											
3	A1	— ✓											
4	D7	— ✓											
5	E7	— ✓											
6	A7	— ✓											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62581
Client Spl. No. 17
Instrument I.D. EM 10 CRX
Screen Magnification 16 400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 4 SS
(GO) Area 0.01134 mm^2
No. GO to be Analyzed 6

Operator GAP
Disk No.
Comments
4.721 Struct. Corspd to 70 s mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	R3	NSD											
2	R2	— ✓											
3	S1	— ✓											
4	C1	— ✓											
5	H1	— ✓											
6	N1	— ✓											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

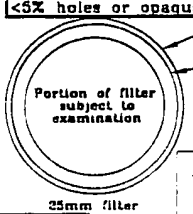
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62582
Client Spl. No 18
Instrument I.D EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 9 8 8
(GO) Area 0.00124 mm^2
No. GO to be Analyzed 6

Operator [illegible]
Disk No
Comments
(4,721 Struct. Corspd. to 70 s/mm^2)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	D1	NSD											
2	E1	--											
3	A1	--											
4	F1	--											
5	K1	--											
6	R1	--											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<3% holes or opaque areas

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62583
Client Spl. No 19
Instrument I.D. EM 10 CRX
Screen Magnification 15,400X
Acc Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. C/S78
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator [illegible]
Disk No.
Comments
4.721 Struct. Corspd. to 70 s/mm^2.

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	X2	N50											
2	Q2	— ✓											
3	J3	— ✓											
4	F1	— ✓											
5	K1	— ✓											
6	R1	— ✓											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

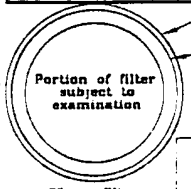
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections. 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62584
Client Spl. No 20
Instrument I.D EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 4 & 8
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator
Disk No.
Comments
(4.721 Struct. Corsod. to 70 s/mm^2)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	D2	NSD											
2	E2	— "											
3	P2	— "											
4	E4	— "											
5	P4	— "											
6	U4	— "											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62585
Client Spl. No. 21
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. [illegible]
GO Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator [illegible]
Disk No.
Comments
4,721 Struct. Corspd. to 70 s/mm^2.

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	D1	NSD											
2	E1	— "											
3	D1	— "											
4	B8	— "											
5	E8	— "											
6	J8	— "											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

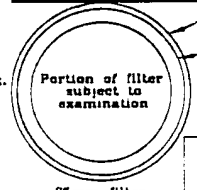
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62586
Client Spl. No. 22
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. [illegible]
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator [illegible]
Disk No.
Comments
(4,721 Struct. Corspd. to 70 s/mm^2.)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	P1	NSD											
2	U1	— —											
3	Z1	— —											
4	D7	— —											
5	E7	— —											
6	P7	— —											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

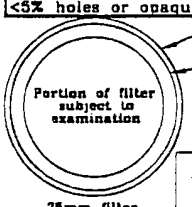
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.3 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62537
Client Spl No. 23
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 438
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 5

Operator UUP
Disk No.
Comments
(4.721 Struct. Corspd. to 70 s/mm^2.)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	E3	NSO											
2	J3	— "											
3	Q3	— "											
4	P1	— "											
5	U1	— "											
6	Z1	— "											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

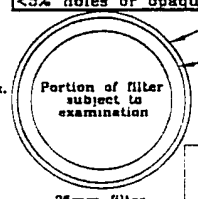
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62588
Client Spl. No. 24
Instrument I.D. EM 10 CRX
Screen Magnification 15,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 4 X 8
GO Area .11124 mm^2
No. GO to be Analyzed 3

Operator VCP
Disk No.
Comments
4.721 Struct. Corrspd. to 7.5 mm^2.

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	E1	NSD											
2	J1	—											
3	Q4	—											
4	D2	—											
5	C2	—											
6	P2	—											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

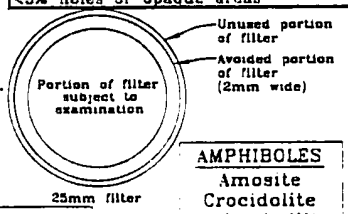
✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.

For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.

For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62589
Client Spl. No. 25
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. Y83
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator CCP
Disk No.
Comments
(4.721 Struct Corsod. to 70 s/mm^2)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	A1	NSD											
2	D1	–											
3	E1	–											
4	E8	–											
5	P8	–											
6	U8	–											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

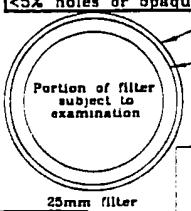
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62590
Client Spl. No. 26
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 088
(GO) Area 0.01124 mm^2
No GO to be Analyzed 6

Operator
Disk No.
Comments
4,721 Struct. Corspd. to 70 s/mm^2.

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure N or ✓ Chrys.	Amphibole	Nonasb.	Ambig./ND	EDS (Nonasb. Elements)
1	F1	NSD											
2	K1	— "											
3	R1	— "											
4	D2	— "											
5	E2	— "											
6	P2	— "											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm^2 (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

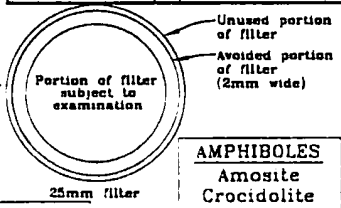
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections. 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62591
Client Spl. No. 27
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. U8P
(GO) Area 0.01124 mm^2
No. GO to be Analyzed 6

Operator [illegible]
Disk No
Comments
(4,721 Struct. Corspd. to 70 s/mm^2)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	LP	NSD											
2	JP	— ✓											
3	QP	— ✓											
4	K2	— ✓											
5	R2	— ✓											
6	V2	— ✓											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

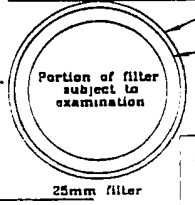
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62532
Client Spl. No. 28
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 285
(GO) Area 0.01224 mm^2
No. GO to be Analyzed 6

Operator
Disk No.
Comments
(4.721 Struct. Corspd. to 70 s/mm^2.)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	K1	NSD											
2	R1	— "											
3	V1	— "											
4	R1	— "											
5	R1	— "											
6	V1	— "											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

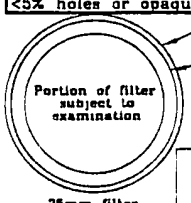
N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP #: 5771 - 10/26/01

Lab Sample No. 62593
Client Spl. No 29
Instrument I.D EM 10 CRX
Screen Magnification 16,400X
Acc Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. 988
(GO) Area 0.01124 mm^2
No GO to be Analyzed 6

Operator LLP
Disk No
Comments
4 721 Struct. Corsed 30 70 s mm^2

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	D1	1150											
2	E1	— "											
3	F1	— "											
4	E1	— "											
5	F1	— "											
6	G1	— "											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >60% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

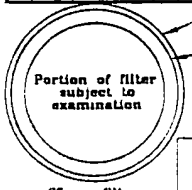
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections. 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC. – TEM ANALYSIS

LAB GROUP # 5771 - 11/26/01

Lab Sample No. 63594
Client Spl. No. 30
Instrument I.D. EM 10 CRX
Screen Magnification 16,400X
Acc. Voltage 80 kV

Filter Type MCE 25 mm
Filter Area 385 mm^2
Grid I.D. G33
(GO) Area 1.01124 mm^2
No. GO to be Analyzed 6

Operator
Disk No.
Comments
/ 4 721 Struct. Corspd. to 70 s/mm^2)

GO. No.	GO. Coord.	Structure No.	Structure Type F	B	C	M	Length ≥0.5 um < 5 um	≥ 5um	I.D. of Structure Chrys.	Amphibole	Nonasb.	N or ✓ Ambig./ND	EDS (Nonasb. Elements)
1	D2	N50											
2	E2	— c											
3	P2	— c											
4	Q3	— c											
5	M3	— c											
6	N3	— c											

Photo No. (from 1 in 5 asbestos-containing samples)

Identify all structures using EDS

Check diffraction for asbestos structures up to 70s/mm² (1st 4)

Store all unrepeated spectra

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage
at least 20 unfolded or overlapped grid squares
<5% holes or opaque areas

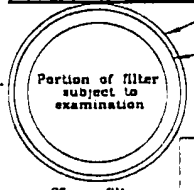
Struct. = ≥ 0.5um & > 5:1 Aspect Ratio

N= Not Observed (EDS spectrum or diffraction pattern)

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed.
For chrysotile: 0.73nm spacing for (020) reflections, 0.53nm spacing for the layer line repeat, streaking of (110) and (130) reflections.
For amphiboles: 0.53nm layer line repeat, and approx. 3.5 ratio of non-twinned layer line spot spacing to layer line repeat distance (0.53nm).

✓= EDS spectrum conforming to laboratory identification criteria observed.

F= Single Fiber (1-3 intersections = 1-3 fibers)
B= Bundle (>3 fibers <1 fiber diameter apart)
C= Cluster (>3 intersections)
M= Matrix
NSD= No Structures Detected



Stopping Rules:
>50 s/G.O. or in 1st 4 G.O.

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	≥ 5um
Chrysotile					
Amphibole					
Ambiguous					
Non-asbestos					
Non-Identified					

L:\DATA\PRIVATE\MIKEG\CADD\TEM3 9/22/98

ATC ASSOCIATES INC.

S 771

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
[illegible]	2a. Project Address [illegible]	3a. Task #	4a. Air Sampler:	[illegible]

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
[illegible]		Cassette/Filter Manufacture _____ Lot # _____	Cassette/Filter Manufacture [illegible] Lot # [illegible]	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				[illegible] SB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I [illegible]			
II	[illegible]	[illegible]	[illegible]
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: [illegible]	23. Date:	24. Time:
a. Analyzed By: [illegible]	[illegible]	[illegible]
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: [illegible]

27. Result To: _____
Beeper/Phone #'s _____

28. Comments:

WHITE - File **YELLOW** - Client/Report **PINK** - Lab **GOLDENROD** - Field

NY-1 (1/01)

NYC 9/11 Public Portal Document

NYC-WTC_000104409

ATC ASSOCIATES INC

S 771

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
[illegible] Young	2a. Project Address [illegible]	3a. Task #	4a. Air Sampler:	[illegible]

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
[illegible]		Cassette/Filter Manufacture ____ Lot # ____	Cassette/Filter Manufacture [illegible] Lot # [illegible]	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
95				AH #1 / 1A	9910	9920	130	10	[illegible]	[illegible]	1300		
96				AH #1 / 1D	9915	9925	130	10	[illegible]	[illegible]	1300		
97				AH #1 / 1E	9920	9930	130	10	[illegible]	[illegible]	1300		
98				AH #1 / 2E	9925	9935	130	10	[illegible]	10	1300		
99				AH #1 / 1B	9930	9940	[illegible]	[illegible]	[illegible]	10	1300		
100				AH #1 / 8B	9935	9945	130	10	[illegible]	10	1300		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I [illegible]			
II [illegible]	JP	10/26/6[illegible]	[illegible]
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: [illegible]	23. Date:	24. Time:
a. Analyzed By: [illegible]	[illegible]	[illegible]
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: [illegible]

27. Result To: _____
Beeper/Phone #'s _____

28. Comments:

WHITE - File **YELLOW** - Client/Report **PINK** - Lab **GOLDENROD** - Field

NY-1 (1/01)

NYC 9/11 Public Portal Document

NYC-WTC_000104410

ATC ASSOCIATES INC

S 771

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
[illegible]	2a. Project Address: [illegible]	3a. Task #	4a. Air Sampler:	[illegible]

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
[illegible]		Cassette/Filter Manufacture: [illegible] Lot #	Cassette/Filter Manufacture: [illegible] Lot # [illegible]	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location: 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock): 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.): 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
[illegible]				AH #1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
				2									
[illegible]				AH #1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
				[illegible]									
[illegible]				AH #1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
				[illegible]									
[illegible]				AH #1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
				[illegible]									
[illegible]				AH #1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
				[illegible]									
[illegible]				AH #1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
				SB									

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I [illegible]			
II [illegible]	[illegible]	[illegible]	[illegible]
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: [illegible]	23. Date:	24. Time:
a. Analyzed By: [illegible]	[illegible]	[illegible]
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: [illegible]

27. Result To: _____
Beeper/Phone #'s _____

28. Comments:

WHITE - File **YELLOW** - Client/Report **PINK** - Lab **GOLDENROD** - Field

NY-1 (1/01)

NYC 9/11 Public Portal Document

NYC-WTC_000104411

ATC ASSOCIATES INC

5771

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
[illegible] Yards	2a. Project Address [illegible]	3a. Task #	4a. Air Sampler:	[illegible]

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
[illegible]		Cassette/Filter Manufacture [illegible] Lot # [illegible]	Cassette/Filter Manufacture [illegible] Lot # [illegible]	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
95				AFH / 2	9910	9940	130	10	"	10	1300		
96				AFH / 1	9915	9945	130	10	"	10	1300		
97				AFH / 2	9920	9950	130	10	"	10	1300		
98				AFH / 1	9925	9955	130	"	"	10	1300		
99				AFH / 2	9930	9960	"	"	"	10	1300		
100				AFH / 1 SB	9935	9965	130	"	"	10	1300		

CHAIN OF CUSTODY

	18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I	[illegible]			
II		JP	10/26/[illegible]	[illegible]
III				

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: [illegible]	23. Date:	24. Time:
a. Analyzed By: [illegible]	[illegible]	[illegible]
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

26. ATC Project Manager: [illegible]

27. Result To: _____
Beeper/Phone #'s _____

28. Comments:

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/01)

NYC 9/11 Public Portal Document

NYC-WTC_000104412

ATC ASSOCIATES INC

5771

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
[illegible]	2a. Project Address [illegible]	3a. Task #	4a. Air Sampler:	[illegible]

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
[illegible]		Cassette/Filter Manufacture _____ Lot # _____	Cassette/Filter Manufacture [illegible] Lot # [illegible]	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
[illegible]				AH-H / [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				AH-H / [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				AH-H / [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				AH-H / [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				AH-H / [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]				AH-H / SB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I [illegible]			
II [illegible]	[illegible]	[illegible]	[illegible]
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: [illegible]	23. Date:	24. Time:
a. Analyzed By: [illegible]	[illegible]	[illegible]
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

26. ATC Project Manager: [illegible]

27. Result To: _____
Beeper/Phone #'s _____

28. Comments:

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/01)

NYC 9/11 Public Portal Document

NYC-WTC_000104413

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

H A / 5 12

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

November 8, 2001

ATC Associates Inc.
104 East 25th Street
New York, NY 10010
Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 5850:

Client: Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: Various Sites
Samples received: 11/08/01

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites. As indicated on the attached document, no asbestos structures were detected in any of the eighteen ambient samples submitted from the site. Nuclepore TEM cassettes, Lot No. 98240617, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. If post-abatement inside samples pass, the response action may be considered to have been completed. The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc. Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Associates
104 East 25 Street, New York, NY 10010
Phone: (212) 353-8280 Fax: (212) 353-8306

Attn: Mr. Fred Burkhardt
ATC Associates Inc
104 East 25th Street
New York NY 10010
Fax: (212) 353-8306 Phone: (212) 353-8280

Received: 11/8/01 8:00:00 AM
ATC Group #: 5850
Analysis Date: 11/8/01

Project: Tribeca Towers
105 Duane Street, NY, NY

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	Volume	Area Analyzed	Non Asb	Asbestos Type(s)	Structures 0.5u-5	Structures 5u	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)	Notes
1 - 5850 -1	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
2 - 5850 -2	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
3 - 5850 -3	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
4 - 5850 -4	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
5 - 5850 -5	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
6 - 5850 -6	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
7 - 5850 -7	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
8 - 5850 -8	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	

ROMAN PEYSAKHOV
Analyzed by: RRly

MICHAEL A. GORYCKI, Ph.D.
Approved by:

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

Attn: Mr. Fred Burkhardt
ATC Associates Inc
104 East 25th Street
New York NY 10010
Fax: (212) 353-8306 Phone: (212) 353-8280
Project: Tribeca Towers
105 Duane Street, NY, NY

Received: 11/8/01 8:00:00 AM
ATC Group #: 5850
Analysis Date: 11/8/01

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	Volume	Area Analyzed	Non Asb	Asbestos Type(s)	Structures 0.5μ-5	Structures 5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)	Notes
9 - 5850 -9	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
10 - 5850 -10	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
11 - 5850 -11	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
12 - 5850 -12	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-1 - 5850 -13	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-2 - 5850 -14	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-3 - 5850 -15	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-4 - 5850 -16	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-5 - 5850 -17	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-6 - 5850 -18	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	

ROMAN PEYSAKHOV
Analyzed by: RPey

MICHAEL A. GORYCKI, Ph.D.
Approved by:

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	1	Grid Opening Size:	0.01124
Client Sample #:	1	Area Examined:	0.06744 mm²
GRID BOX:	5.0	Magnification:	20,000
GRID ID:	7AC	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP

ROMAN PEYSAKHOV

GC No	GC Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	J2	NSA											
2	Q2	"											
3	X2	"											
4	I3	"											
5	P1	"											
6	V1	"											

A

C

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	2	Grid Opening Size:	0.01124
Client Sample #:	2	Area Examined:	0.06744 mm²
GRID BOX:	519	Magnification:	20,000
GRID ID:	7EC	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP

ROMAN PEYSAKHOV

	GO		Structure No	Structure Type				Length		ID of Structure N or Y				EDS (Nonasb Elements)
	No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/NC	
E	1	I2	NSD											
	2	P2	"											
	3	V2	"											
	4	I2	"											
	5	X3	"											
G	6	P2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

Y = Positive diffraction pattern properties conforming to laboratory identification criteria observed

Y = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<2 fibers <1 fiber diameter apart)

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	3	Grid Opening Size:	0.01124
Client Sample #:	3	Area Examined:	0.06744 mm²
GRID BOX:	5/9	Magnification:	20,000
GRID ID:	TZ&B	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

	GO. No	GO. Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
I	1	V2	NSD											
	2	P2	"											
	3	I2	"											
	4	Q7	"											
	5	P4	"											
B	6	I4	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V= Positive diffraction pattern properties conforming to laboratory identification criteria observed

V= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (>3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage are least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	4	Grid Opening Size:	0.01124
Client Sample #:	4	Area Examined:	0.06744 mm²
GRID BOX:	519	Magnification:	20,000
GRID ID:	X	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP

ROMAN PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonasb Elements)
No	Coord		F	B	C	M	>=05 µ <5u	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	R2	NSD											
2	Q2	"											
3	X2	"											
4	Q2	"											
5	P2	"											
6	I2	"											

D

F

Struct = > 0.5µ >= 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (>3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Amphiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	5	Grid Opening Size:	0.01124
Client Sample #:	5	Area Examined:	0.06744 mm²
GRID BOX:	519	Magnification:	20,000
GRID ID:	8H5	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GC. No	GC. Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/NC	EDS (Nonasb Elements)
1	J2	NSD											
2	I4	"											
3	P2	"											
4	Q7	"											
5	J3	"											
6	I2	"											

Struct = > 0.5u > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage site least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	6	Grid Opening Size:	0.01124
Client Sample #:	6	Area Examined:	0.06744 mm²
GRID BOX:	5/9	Magnification:	20,000
GRID ID:	9AC	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP

ROMAN PEYSAKHOV

	GC		Structure No	Structure Type				Length		ID of Structure N or Y				EDS (Nonadb Elements)
	No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/NC	
A	1	R2	NSD											
	2	Q2	"											
	3	J1	"											
	4	V2	"											
	5	P1	"											
C	6	I2	"											

Struct = > 0.5u > 5:1 Aspect Ratio

Y= Positive diffraction pattern properties conforming to laboratory identification criteria observed

Y= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5u
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5350	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	7	Grid Opening Size:	0.01124
Client Sample #:	7	Area Examined:	0.06744 mm²
GRID BOX:	5/9	Magnification:	20,000
GRID ID:	9EC	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: JP
ROMAN PEYSAKHOV

GO. No	Coord	Structure Nc	Structure Type F	B	C	M	Length >=.05 µ <5µ	>=5µ	ID of Structure N or Y Chrys	Amphibole	Nonasb	Ambig/NC	EDS (Nonasb Elements)
1	V2	NSD											
2	Q2	"											
3	J2	"											
4	V2	"											
5	P2	"											
6	I2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage are least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	8	Grid Opening Size:	0.01124
Client Sample #:	8	Area Examined:	0.06744 mm²
GRID BOX:	519	Magnification:	20,000
GRID ID:	91103	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

	GC. No	GC. Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5µ	>=5µ	ID of Structure (Y or N) Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonasb Elements)
I	1	P2	N810											
	2	L3	"											
	3	J3	"											
	4	J2	"											
	5	Q2	"											
B	6	X2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

Y/= Positive diffraction pattern properties conforming to laboratory identification criteria observed

Y/= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	9	Grid Opening Size:	0.01124
Client Sample #:	9	Area Examined:	0.06744 mm²
GRID BOX:	579	Magnification:	20,000
GRID ID:	1	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GC		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonasb Elements)
No	Coord		F	B	C	M	>=0.5 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Amblg/ND	
1	I2	NSD											
2	P1	"											
3	X2	"											
4	V2	"											
5	P2	"											
6	I2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type Filter Area:	MCE 385 mm²
Lab Sample #:	10	Grid Opening Size:	0.01124
Client Sample #:	10 -	Area Examined:	0.06744 mm²
GRID BOX:	519	Magnification:	20,000
GRID ID:	10HJ	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GC No	GC Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5µ	>=5µ	ID of Structure Y or N Chrys	Amphibole	Nonasb	Amblg/ND	EDS (Nonasb Elements)
OH 1	J2	NSD											
2	Q2	"											
3	X2	"											
4	X2	"											
5	P2	"											
6	I2	"											
5													

Struct = > 0.5µ > 5:1 Aspect Ratio

Y= Positive diffraction pattern properties conforming to laboratory identification criteria observed

Y= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	11	Grid Opening Size:	0.01124
Client Sample #:	11	Area Examined:	0.06744 mm²
GRID BOX:	519	Magnification:	20,000
GRID ID:	12N	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11 8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GC		Structure No	Structure Type				Length		ID of Structure N or Y				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=0.5 µ <5u	>=5µ	Chrys	Amphibole	Nonasb	Amblg:NC	
1	PZ	NSD											
2	Q3	"											
3	YZ	"											
4	PZ	"											
5	QZ	"											
6	SZ	"											

Struct = > 0.5u > 5:1 Aspect Ratio

N = Positive diffraction pattern properties conforming to laboratory identification criteria observed

N = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart)

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage are least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5u
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	12	Grid Opening Size:	0.01124
Client Sample #:	12	Area Examined:	0.06744 mm²
GRID BOX:	5/9	Magnification:	20,000
GRID ID:	1PR	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO. No	GO. Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Amolg/NC	EDS (Nonadb Elements)
1	J2	NSD											
2	Q2	"											
3	X2	"											
4	I2	"											
5	P2	"											
6	V2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage are least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5L
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	13	Grid Opening Size:	0.01124
Client Sample #:	H-1 -	Area Examined:	0.06744 mm²
GRID BOX:	519	Magnification:	20,000
GRID ID:	1T2K	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/NC	EDS (Nonadb Elements)
1	X2	NSD											
2	P2	"											
3	H3	"											
4	K2	"											
5	J2	"											
6	I2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

N = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage are least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 355 mm²
Lab Sample #:	14	Grid Opening Size:	0.01124
Client Sample #:	H-2	Area Examined:	0.06744 mm²
GRID BOX:	519	Magnification:	20,000
GRID ID:	Z440	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/NC	EDS (Nonasb Elements)
1	X1	NSD											
2	Q2	"											
3	J2	"											
4	I2	"											
5	P2	"											
6	V2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	15	Grid Opening Size:	0.01124
Client Sample #:	H-3 -	Area Examined:	0.06744 mm²
GRID BOX:	5/9	Magnification:	20,000
GRID ID:	2&5	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5u	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Amdig/NC	EDS (Nonasb Elements)
1	K2	NSD											
2	J2	"											
3	I2	"											
4	I3	"											
5	P2	"											
6	V2	"											

Struct = > 0.5u > 3:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate
least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5u
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	16	Grid Opening Size:	0.01124
Client Sample #:	H-4	Area Examined:	0.06744 mm²
GRID BOX:	5/9	Magnification:	20,000
GRID ID:	3L/N	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GC No	GC Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5u	>=5u	ID of Structure Y or N Chrys	Amphibole	Nonasb	Amblg/ND	EDS (Nonasb Elements)
1	V2	NSD											
2	P2	"											
3	J2	"											
4	I2	"											
5	P2	"											
6	V2	"											

Struct = > 0.5µ > 3:1 Aspect Ratio

Y = Positive diffraction pattern properties conforming to laboratory identification criteria observed

Y = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage at least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	<5u
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1500
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	17	Grid Opening Size:	0.01124
Client Sample #:	H-5 -	Area Examined:	0.06744 mm²
GRID BOX:	5/9	Magnification:	20,000
GRID ID:	3PR	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP

ROMAN PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/NC	EDS (Nonasb Elements)
1	J2	NSD											
2	Q2	"											
3	V2	"											
4	V2	"											
5	X2	"											
6	Q2	"											

Struct = > 0.5µ > 3:1 Aspect Ratio

N = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	5850	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	18	Grid Opening Size:	0.01124
Client Sample #:	H-6	Area Examined:	0.06744 mm²
GRID BOX:	5/9	Magnification:	20,000
GRID ID:	3/4K	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	11/8/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonasb Elements)
1	X2	NSD											
2	Q2	"											
3	J2	"											
4	X2	"											
5	Q2	"											
6	J2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V= Positive diffraction pattern properties conforming to laboratory identification criteria observed

N= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (> 3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

NYC-WTC_000104435

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

5850 18/20 63407-63426

Page ____ of ____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☑ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other ____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
[illegible]	2a. Project Address: [illegible] St NY NY	3a. Task #	4a. Air Sampler:	[illegible]

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☑ TEM (0.45 micron MCE)	9. Type:
[illegible]		Cassette/Filter Manufacture ____ Lot # ____	Cassette/Filter Manufacture [illegible] Lot # [illegible]	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location: 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock): 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.): 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
1				51 FL									
				APT 51D	1015	1215	150	10	10	10	[illegible]		
				49 FL									
				APT 49B	1010	1250	1 0	10	10	10	[illegible]		
				46 FL									
				APT 46D	1015	1235	1 0	10	10	10	[illegible]		
				27 FL									
				APT 27A	1035	1245	30	10	10	10	[illegible]		
				22 FL									
				APT 22D	1040	1250	130	10	10	10	[illegible]		
6				16 FL									
				APT 16B	1045	1255	1 0	10	10	10	[illegible]		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I			
II	JD	11/8/01	8 am
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RKW	11.8	12 30
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

26. ATC Project Manager: [illegible]

27. Result To: [illegible]
Beeper/Phone #'s ____

28. Comments:

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY 1 (1/01)

NYC-WTC_000104436

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

5850

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address	3a. Task #	4a. Air Sampler:	

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE) Cassette/Filter Manufacture ____ Lot # ____	8. ☑ TEM (0.45 micron MCE) Cassette/Filter Manufacture ____ Lot # ____	9. Type: a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
				2 UFC									
				APT 94A	1410	1620	130	10	10	[illegible]	[illegible]		
				23 FC									
				APT 92E	1415	1625	130	10	10	10	[illegible]		
9				16 FC									
				APT 16 FG	1425	[illegible]	130	10	10	10	[illegible]		
10				39 FC									
				APT 39A	1800	2010	130	10	10	10	[illegible]		
11				39 FL									
				APT 39E	1810	2020	130	10	10	10	[illegible]		
12				91 FL, APT 91E	1815	2025	130	10	10	10	[illegible]		
13													

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I			
II	JD	11/8/01	8am
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: R. Ray	11.8	12:30
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
[ ] Nikon Labophot 238913
[ ] Nikon Labophot 238917
[ ] Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: [illegible]

27. Result To: Fred Sutherland
Beeper/Phone #'s _____

28. Comments:

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY 1 (1/01)

NYC-WTC_000104437

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

OJECT INFORMATION

Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address	3a. Task #	4a. Air Sampler:	

Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☑ TEM (0.45 micron MCE)	9. Type:
		Cassette/Filter Manufacture _____ Lot # _____	Cassette/Filter Manufacture _____ Lot # _____	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

ILY AIR SAMPLE RECORD

Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
57				Field Blank									
				Field Blank									
1				Hallway 50FC	1500	1510	10	10	10	10	1200		
1				Hallway 40FC	1510	1520	10	10	10	10	1200		
				Hallway 30FC	1520	1530	10	10	10	10	1200		
				Hallway 20FC	1530	1540	10	10	10	10	1200		
				Hallway 10FC	1540	1550	10	10	10	10	1200		
6				Lobby	1550	1600	10	10	10	10	1200		

AIN OF CUSTODY

Relinquished By:	19. Received By:	20. Date:	21. Time:
	JB	11/8/01	8:00

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RDay	11.8	12:30
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

ATC Project Manager: [illegible]

27. Result To: [illegible]

Beeper/Phone #'s _____

28. Comments:

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY 1 (1/01)

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

November 23, 2001

ATC Associates Inc.
104 East 25th Street
New York, NY 10010
Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 5954:

Client: Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: Various Sites
Samples received: 11/23/01

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites. As indicated on the attached document, no asbestos structures were detected in any of the seventeen ambient samples submitted from the site. MMI TEM cassettes, Lot No. 0025916, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. If post-abatement inside samples pass, the response action may be considered to have been completed The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc. Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Associates

104 East 25 Street, New York, NY 10010

Phone: (212) 353-8280 Fax: (212) 353-8306

Attn: Mr. Fred Burkhardt
ATC Associates Inc
104 East 25th Street
New York NY 10010

Fax: (212) 353-8306 **Phone:** (212) 353-8280

Project: Tribeca Towers
105 Duane Street, NY, NY

Received: 11/23/01 5:00:00 AM

ATC Group #: 5954

Analysis Date: 11/23/01

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	Volume	Area Analyzed	Non Asb	Asbestos Type(s)	Structures 0.5μ-5	Structures 5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)	Notes
1 5954 -1	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
2 5954 -2	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
3 5954 -3	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
4 5954 -4	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
5 5954 -5	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
6 5954 -6	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
7 5954 -7	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
8 5954 -8	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	

ROMAN PEYSAKHOV
Analyzed by:

MICHAEL A. GORYCKI, Ph.D.
Approved by:

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

Attn: Mr. Fred Burkhardt
ATC Associates Inc
104 East 25th Street
New York NY 10010
Fax: (212) 353-8306 Phone: (212) 353-8280

Project: Tribeca Towers
105 Duane Street, NY, NY

Received: 11/23/01 5:00:00 AM
ATC Group #: 5954
Analysis Date: 11/23/01

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	Volume	Area Analyzed	Non Asb	Asbestos Type(s)	Structures 0.5μ-5	Structures 5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)	Notes
9 5954 -9	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
10 5954 -10	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
11 5954 -11	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-1 5954 -12	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-2 5954 -13	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-3 5954 -14	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-4 5954 -15	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-5 5954 -16	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
H-6 5954 -17	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	

ROMAN PEYSAKHOV
Analyzed by: RRey

MICHAEL A. GORYCKI, Ph.D.
Approved by:

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	1	**Grid Opening Size:**	0.01124
Client Sample #:	1	**Area Examined:**	0.06744 mm²
GRID BOX:	5	**Magnification:**	20,000
GRID ID:	100	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO.		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	I2	N 90											
2	H3	"											
3	D6	"											
4	G1	"											
5	R1	"											
6	K1	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	2	**Grid Opening Size:**	0.01124
Client Sample #:	2	**Area Examined:**	0.06744 mm²
GRID BOX:	5C4	**Magnification:**	20,000
GRID ID:	1E7	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO.		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	N2	NSD											
2	E9	"											
3	K9	"											
4	R2	"											
5	Q2	"											
6	I2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 Intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	3	**Grid Opening Size:**	0.01124
Client Sample #:	3	**Area Examined:**	0.06744 mm²
GRID BOX:	5th	**Magnification:**	20,000
GRID ID:	2BC	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO.		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	D2	NSD											
2	I2	"											
3	P2	"											
4	V2	"											
5	P2	"											
6	I2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

V= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 Intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	4	**Grid Opening Size:**	0.01124
Client Sample #:	4	**Area Examined:**	0.06744 mm²
GRID BOX:	5 68	**Magnification:**	20,000
GRID ID:	2 2 E	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	ST	NSD											
2	T2	"											
3	T2	"											
4	Q2	"											
5	X2	"											
6	P8	"											

D

E

Struct = > 0.5µ > 5:1 Aspect Ratio

V= Positive diffraction pattern properties conforming to laboratory identification criteria observed

V= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	5	**Grid Opening Size:**	0.01124
Client Sample #:	5	**Area Examined:**	0.06744 mm²
GRID BOX:	5C8	**Magnification:**	20,000
GRID ID:	3.4B	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

	GO. No	GO. Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
A	1	J2	NSD											
	2	Q2	"											
	3	P2	"											
	4	V2	"											
	5	P2	"											
B	6	J2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	6	**Grid Opening Size:**	0.01124
Client Sample #:	6	**Area Examined:**	0.06744 mm²
GRID BOX:	5BU	**Magnification:**	20,000
GRID ID:	3CQ	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	JY	NSD											
2	QZ	"											
3	XZ	"											
4	PZ	"											
5	IZ	"											
6	JZ	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V= Positive diffraction pattern properties conforming to laboratory identification criteria observed

V= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	7	**Grid Opening Size:**	0.01124
Client Sample #:	7	**Area Examined:**	0.06744 mm²
GRID BOX:	562	**Magnification:**	20,000
GRID ID:	3E4A	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	R2	NSD											
2	Q2	"											
3	P2	"											
4	X2	"											
5	Q2	"											
6	J2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	8	**Grid Opening Size:**	0.01124
Client Sample #:	8	**Area Examined:**	0.06744 mm²
GRID BOX:	5 Tag	**Magnification:**	20,000
GRID ID:	4BC	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO.		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
B 1	Q2	NSD											
2	P2	"											
3	N2	"											
4	V2	"											
5	P2	"											
6	I2	"											
C													

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 Intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	9	**Grid Opening Size:**	0.01124
Client Sample #:	9	**Area Examined:**	0.06744 mm²
GRID BOX:	5G8	**Magnification:**	20,000
GRID ID:	4AE	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	J3	NSD											
2	Q9	"											
3	V2	"											
4	X2	"											
5	P4	"											
6	I2	"											

Struct = > 0.5u > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5u
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	10	**Grid Opening Size:**	0.01124
Client Sample #:	10	**Area Examined:**	0.06744 mm²
GRID BOX:	583	**Magnification:**	20,000
GRID ID:	5AB	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonasb Elements)
A 1	V2	NSD											
2	P2	"											
3	I2	"											
4	J3	"											
5	Q3	"											
C 6	X2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	11	**Grid Opening Size:**	0.01124
Client Sample #:	11	**Area Examined:**	0.06744 mm²
GRID BOX:	5	**Magnification:**	20,000
GRID ID:	5CL	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonasb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	X1	N80											
2	J9	"											
3	I2	"											
4	V2	"											
5	P2	"											
6	I2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	12	**Grid Opening Size:**	0.01124
Client Sample #:	H-1	**Area Examined:**	0.06744 mm²
GRID BOX:	5BE	**Magnification:**	20,000
GRID ID:	5EGA	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	P2	NSD											
2	S3	"											
3	Q3	"											
4	I2	"											
5	J2	"											
6	Q2	"											

Struct = > 0.5u > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthoonyilite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type Filter Area:**	MCE 385 mm²
Lab Sample #:	13	**Grid Opening Size:**	0.01124
Client Sample #:	H-2	**Area Examined:**	0.06744 mm²
GRID BOX:	5 of 4	**Magnification:**	20,000
GRID ID:	GBC	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
B 1	Q9	NSD											
2	J9	"											
3	I2	"											
V 4	J2	"											
5	Q2	"											
D 6	V2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V= Positive diffraction pattern properties conforming to laboratory identification criteria observed

N= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	14	**Grid Opening Size:**	0.01124
Client Sample #:	H-3	**Area Examined:**	0.06744 mm²
GRID BOX:	5	**Magnification:**	20,000
GRID ID:	CDE	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO.		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	I2	NSD											
2	P2	"											
3	V2	"											
4	J2	"											
5	Q2	"											
6	X2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	15	**Grid Opening Size:**	0.01124
Client Sample #:	H-4	**Area Examined:**	0.06744 mm²
GRID BOX:	5 of	**Magnification:**	20,000
GRID ID:	1A B	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

	GO		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonadb Elements)
	No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Amblg/ND	
1A	1	X2	NSD											
	2	Q3	"											
	3	J2	"											
	4	I2	"											
	5	P2	"											
1B	6	V2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate
least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	16	**Grid Opening Size:**	0.01124
Client Sample #:	H-5	**Area Examined:**	0.06744 mm²
GRID BOX:	[illegible]	**Magnification:**	20,000
GRID ID:	7CE	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO		Structure	Structure Type				Length		ID of Structure N or V				EDS
No	Coord	No	F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Amoig/ND	(Nonadb Elements)
1	V2	NSD											
2	P6	"											
3	Q2	"											
4	Q2	"											
5	J2	"											
6	I2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	5954	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	17	**Grid Opening Size:**	0.01124
Client Sample #:	H-6	**Area Examined:**	0.06744 mm²
GRID BOX:	504	**Magnification:**	20,000
GRID ID:	TE8A	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	11/23/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
E 1	Q2	NSD											
2	P2	"											
3	I2	"											
4	V2	"											
5	P2	"											
A 6	I2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

NYC-WTC_000104458

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

994 12/20 64930-64969

1. Client:	2. Project Name	3. Project #	4. Project Monitor: Jim Hurst Bouskill	4c. Rotameter Number:
Tribeca Towers	2a. Project Address: 105 Duane st	3a. Task #	4a. Air Sampler:	SD-152

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
11/21/01		Cassette/Filter Manufacture: X Lot #	Cassette/Filter Manufacture: MMC Lot # 0025916	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☒ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location: 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock): 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.): 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
B-1				Field Blank									
B-2				Field Blank									
1				APT # 36F	1020	1230	130	10	10	10	1300		
2				APT # 28B	1025	1235	130	10	10	10	1300		
3				APT # 26E	1030	1240	130	10	10	10	1300		
4				APT # 25C	1035	1245	130	10	10	10	1300		
5				APT # 23D	1040	1250	130	10	10	10	1300		
6				APT # 18B	1045	1255	130	10	10	10	1300		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I [signature]			
II	KRay	11.23	5:00
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: KRay	11.23	12:00
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
[ ] Nikon Labophot 238913
[ ] Nikon Labophot 238917
[ ] Nikon Labophot 239079

26. ATC Project Manager: Fred Burkhardt

27. Result To: Fred Burkhardt
Beeper/Phone #'s _____

28. Comments:

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NYC-WTC_000104459

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:
Tribeca Towers	2a. Project Address: 165 Duane st	3a. Task #	4a. Air Sampler:

4c. Rotameter Number:	5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
SD-152	11/21/01		Cassette/Filter Manufacture: X Lot #	Cassette/Filter Manufacture: MCE Lot #	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☒ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D Number	11. Pump Number	12. Sample Location: 12a. IWA	12b OWA	12c. Sample Coordinates	13. Time (24 hrs clock): 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.): 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
7				APT # 14F	1050	1300	130	10	10	10	1300		
8				APT # 8L	1055	1305	130	10	10	10	1300		
9				APT # 6D	1100	1300	130	10	10	10	1300		
10				APT # 22H	1800	2010	130	10	10	10	1300		
11				APT # 31D	2200	2410	130	10	10	10	1300		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I [signature]			
II	RRy	11/23	5:00
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RRy	11.23	12:00
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
[ ] Nikon Labophot 238913
[ ] Nikon Labophot 238917
[ ] Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM AHERA

26. ATC Project Manager: Fred Burkhardt

27. Result To: Fred Burkhardt
Beeper/Phone #'s _____

28. Comments:

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NYC-WTC_000104460

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:
Tribeca Towers	2a. Project Address: 105 Duane st	3a. Task #	4a. Air Sampler: Tim Hurst Housley

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:	4c. Rotameter Number:
11/21/01	Hallway	Cassette/Filter Manufacture ✗ Lot #	Cassette/Filter Manufacture MMC Lot #	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☒ Ambient h. ☐ Other	SD-152

DAILY AIR SAMPLE RECORD

10. Sample I.D Number	11. Pump Number	12. Sample Location: 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock): 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.): 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
B 3				Field Blank									
				Field Blank									
H-1				APT # 10D Right side	1500	1710	130	10	10	10	1300		
H-2				APT # 20D Right side	1505	1715	130	10	10	10	1300		
H-3				APT # 30D Right side	1510	1720	130	10	10	10	1300		
H-4				APT # 40D Right side	1515	1725	130	10	10	10	1300		
H-5				APT # 50D Right side	1520	1730	130	10	10	10	1300		
H-6				~~APT~~ Lobby	1530	1740	130	10	10	10	1300		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I [signature]			
II	RJRly	11.23	5:00
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RJRly	11.23	12:00
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
[ ] Nikon Labophot 238913
[ ] Nikon Labophot 238917
[ ] Nikon Labophot 239079

26. ATC Project Manager: Fred Berkhardt

27. Result To: Fred Berkhardt
Beeper/Phone #'s _____

28. Comments:

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

December 6, 2001

ATC Associates Inc.
104 East 25th Street
New York, NY 10010
Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 6053:

Client: Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: Various Apartments
Samples received: 12/06/01

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites. The results of the sample analyses may be found on the attached document. MMI TEM cassettes, Lot No. 0025916, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. If post-abatement inside samples pass, the response action may be considered to have been completed. The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc. Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Associates

104 East 25 Street, New York, NY 10010

Phone: (212) 353-8280 Fax: (212) 353-8306

Attn: Mr. Fred Burkhardt
ATC Associates Inc
104 East 25th Street
New York NY 10010

Fax: (212) 353-8306 **Phone:** (212) 353-8280

Project: Tribeca Towers
105 Duane Street, NY, NY

Received: 12/5/01 8:00:00 AM

ATC Group #: 6053

Analysis Date: 12/6/01

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	Volume	Area Analyzed	Non Asb	Asbestos Type(s)	Structures 0.5u-5	Structures 5u	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)	Notes
01 6053 -1	1200.00	0.0674	0	None Detected	0	0	0.0048	<14.83	<0.0048	
02 6053 -2	1200.00	0.0674	0	None Detected	0	0	0.0048	<14.83	<0.0048	
03 6053 -3	1200.00	0.0674	0	None Detected	0	0	0.0048	<14.83	<0.0048	
04 6053 -4	1200.00	0.0674	0	None Detected	0	0	0.0048	<14.83	<0.0048	
05 6053 -5	1200.00	0.0674	0	None Detected	0	0	0.0048	<14.83	<0.0048	
06 6053 -6	1200.00	0.0674	0	None Detected	0	0	0.0048	<14.83	<0.0048	
07 6053 -7	1200.00	0.0674	0	None Detected	0	0	0.0048	<14.83	<0.0048	
08 6053 -8	1200.00	0.0674	0	None Detected	0	0	0.0048	<14.83	<0.0048	

ROMAN PEYSAKHOV
Analyzed by: RPey

MICHAEL A. GORYCKI, Ph.D.
Approved by: Michael A. Goryck

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1200
Lab Group #:	6053	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	1	Grid Opening Size:	0.01124
Client Sample #:	01	Area Examined:	0.06744 mm²
GRID BOX:	629	Magnification:	20,000
GRID ID:	5ECA	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	12/6/01

Analysis Performed By: RP
MICHAEL GORYCKI

GO. No	GO. Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonasb Elements)
1	Q3	NSD											
2	P6	"											
3	N2	"											
4	J2	"											
5	Q2	"											
6	X2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1200
Lab Group #:	6053	Filter Type Filter Area:	MCE 385 mm²
Lab Sample #:	2	Grid Opening Size:	0.01124
Client Sample #:	02	Area Examined:	0.06744 mm²
GRID BOX:	6ZQ	Magnification:	20,000
GRID ID:	6BC	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	12/6/01

Analysis Performed By: RP
MICHAEL GORYCKI

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Amblg/NC	EDS (Nonadb Elements)
B 1	X2	No 20											
2	Q2	"											
3	I2	"											
4	I2	"											
5	P2	"											
C 6	V2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Amblguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1200
Lab Group #:	6053	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	3	Grid Opening Size:	0.01124
Client Sample #:	03	Area Examined:	0.06744 mm²
GRID BOX:	629	Magnification:	20,000
GRID ID:	6DE	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	12/6/01

Analysis Performed By: RP
MICHAEL GORYCKI

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonasb Elements)
1	I2	NSD											
2	P2	"											
3	V2	"											
4	P2	"											
5	Q2	"											
6	J2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1200
Lab Group #:	6053	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	4	Grid Opening Size:	0.01124
Client Sample #:	04	Area Examined:	0.06744 mm²
GRID BOX:	629	Magnification:	20,000
GRID ID:	7AB	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	12/6/01

Analysis Performed By: RP

MICHAEL GORYCKI

	GO. No	GO. Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonasb Elements)
A	1	R2	NSD											
	2	Q2	"											
	3	P2	"											
	4	J2	"											
	5	P2	"											
B	6	Q2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1200
Lab Group #:	6053	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	5	Grid Opening Size:	0.01124
Client Sample #:	05	Area Examined:	0.06744 mm²
GRID BOX:	629	Magnification:	20,000
GRID ID:	7LD	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	12/6/01

Analysis Performed By: RP
MICHAEL GORYCKI

GO		Structure	Structure Type				Length		ID of Structure N or V				EDS
No	Coord	No	F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/NC	(Nonasb Elements)
1	I2	NSD											
2	J2	"											
3	Q2	"											
4	Q3	"											
5	E2	"											
6	R2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

N = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5u
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1200
Lab Group #:	6053	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	6	Grid Opening Size:	0.01124
Client Sample #:	06	Area Examined:	0.06744 mm²
GRID BOX:	629	Magnification:	20,000
GRID ID:	7E8A	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	12.6/01

Analysis Performed By: RP
MICHAEL GORYCKI

GO		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonasb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/NC	
1	V2	NSD											
2	P2	"											
3	I2	"											
4	V2	"											
5	P2	"											
6	I2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

√ = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage are least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1200
Lab Group #:	6053	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	-	**Grid Opening Size:**	0.01124
Client Sample #:	07	**Area Examined:**	0.06744 mm²
GRID BOX:	629	**Magnification:**	20,000
GRID ID:	8BC	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/6/01

Analysis Performed By: RP

MICHAEL GORYCKI

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonasb Elements)
1	V2	NSD											
2	P2	"											
3	I2	"											
4	I2	"											
5	P2	"											
6	V2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded

<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1200
Lab Group #:	6053	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	8	**Grid Opening Size:**	0.01124
Client Sample #:	08	**Area Examined:**	0.06744 mm²
GRID BOX:	629	**Magnification:**	20,000
GRID ID:	22E	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/6/01

Analysis Performed By: RP
MICHAEL GORYCKI

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=0.5 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Amblg/NC	EDS (Nonadb Elements)
1	I2	NSD											
2	J2	"											
3	Q2	"											
4	H3	"											
5	J4	"											
6	P6	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

NYC-WTC_000104471

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

TURNAROUND TIME

☒ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

60538/10 66170-66179

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address	3a. Task #	4a. Air Sampler:	SD-108

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☒ TEM (0.45 micron MCE)	9. Type:	
12 05 01	APTS:- 36F, 34E, 29E, 26A 4F & 4G. 105 DUANE STREET	Cassette/Filter Manufacture _____ Lot # _____	Cassette/Filter Manufacture _____ Lot # _____	M. SERIKI	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
09				Field Blank OPEN FOR 30 SECS.									
10				Field Blank OPEN FOR 30 SECS.									
01				INSIDE THE LIVING ROOM OF APT. 36F	1125	1325	120	10	10	10	1200		
02				INSIDE THE LIVING ROOM OF APT. 34E	1130	1330	120	10	10	10	1200		
03				INSIDE THE LIVING ROOM OF APT. 29E.	1138	1338	120	10	10	10	1200		
04				INSIDE THE LIVING ROOM OF APT. 26A	1150	1350	120	10	10	10	1200		
05				INSIDE THE LIVING ROOM OF APT. 4F	1158	1358	120	10	10	10	1200		
06				INSIDE THE LIVING ROOM OF APT. 4G	1204	1404	120	10	10	10	1200		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I	JD	12/06/01	8am
II			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RRly	12.06	12:00
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: FRED. BURKHARDT

27. Result To: BRENDAN FARRELL
Beeper/Phone #'s 212-346-7742

28. Comments:

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/01)

NYC-WTC_000104472

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

6053

TURNAROUND TIME

- [x] 2 hrs
- [ ] 6 hrs
- [ ] 48 hrs
- [ ] Standard
- [ ] 4 hrs
- [ ] 24 hrs
- [ ] 72 hrs
- [ ] Other

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address 105 DUANE STREET	3a. Task #	4a. Air Sampler: M. SERIKI	SD-108

5. Date:	6. Abatement Location:	7. [ ] PCM (0.8 micron MCE)	8. [x] TEM (0.45 micron MCE)	9. Type:
12-05-01	APTS: 44A x 21E	Cassette/Filter Manufacture ____ Lot # ____	Cassette/Filter Manufacture ____ Lot # ____	a. [ ] Background b. [ ] Pre-Abate c. [ ] Abatement d. [ ] Post-Abate e. [ ] OSHA f. [ ] Environmental g. [x] Ambient h. [ ] Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank OPEN FOR 30 SECS									
				Field Blank OPEN FOR 30 SECS.									
07				INSIDE THE LIVING ROOM OF APT. 44A	1533	1733	120	10	10	10	1200		
08				INSIDE THE LIVING ROOM OF APT. 21E	1800	2000	120	10	10	10	1200		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I [signature]			
II	JD	12/06/01	8am
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RRy	12.6	10:00
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
- [ ] Nikon Labophot 238913
- [ ] Nikon Labophot 238917
- [ ] Nikon Labophot 239079

26. ATC Project Manager: FRED. BURKHARDT

27. Result To: BRENDAN FARRELL
Beeper/Phone #'s 212-346-7742

28. Comments:

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File **YELLOW** - Client/Report **PINK** - Lab **GOLDENROD** - Field

NY 1 (1/01)

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

4/A
0/10

December 20, 2001

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 6159:

Client: Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: Various Apts.
Samples received: 12/20/01

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites.

The results of the sample analyses may be found on the attached document. MMI TEM cassettes, Lot No. 00263916, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc.

Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

NYC-WTC_000104474

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

6159 10/13 67767-67779

Page [redacted] of [redacted]

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
Tribeca	Tribeca		Oscar Solomy	SP73
	2a. Project Address: 105 Duane St	3a. Task #	4a. Air Sampler: Oscar Solomy	

5. Date	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☒ TEM (0.45 micron MCE)	9. Type:
12/9/01		Cassette/Filter Manufacture _____ Lot # _____	Cassette/Filter Manufacture MMT Lot # 00263916	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☒ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11 Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
01				Field Blank Green Zone									
02 03				Field Blank Green Zone									
04		X		inside apart #37 F.	10:05	12:15	130	10.0	10.0	10	1300		
05		X		inside apart # 20K	10:10	12:20	130	10.0	10.0	10	1300		
06		X		inside apart # 21 F	10:15	12:25	130	10.0	10.0	10	1300		
07		X		inside apart # 21 H	10:18	12:28	130	10.0	10.0	10	1300		
08		✓		inside apart # 39F	14:00	16:10	130	10.0	10.0	10	1300		
09		✓		inside apart # 33A	14:10	16:20	130	10.0	10.0	10	1300		
10		✓		inside apart # 28B	14:15	16:25	130	10.0	10.0	10	1300		
11		✓		inside apart # 16L	14:20	16:30	130	10.0	10.0	10	1300		
12		✓		APT # 17BC	1820	2030	130	10.0	10.0	10	1300		
13		✓		APT # 9CB	1830	2040	130	10.0	10.0	10	1300		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I OSolomy			
II	TD	12/20/01	5:30 pm
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name:	23. Date:	24. Time:
a. Analyzed By:	12/20	15:00
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: F. Burkhardt

27. Result To: F. Burkhardt

Beeper/Phone #'s _____

28. Comments:

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY 1 (1/01)

Attn: Mr. Fred Burkhardt
ATC Associates Inc.
104 East 25th Street
New York NY 10010
Fax: (212) 353-3599 Phone: (212) 353-8280

Project: Tribeca Towers
105 Duane Street, NY, NY

Received: 12/20/01 5:30:00 AM
ATC Group #: 6159
Analysis Date: 12/20/01

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	Volume	Area Analyzed	Non Asb	Asbestos Type(s)	Structures 0.5μ-5	Structures 5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)	Notes
12 6159 -9	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
13 6159 -10	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	

MARK PEYSAKHOV
Analyzed by:

MICHAEL A. GORYCKI, Ph.D.
Approved by:

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

TEM Asbestos (air) Count Sheet

Client Name:	ATC	Volume (liters):	1300
Lab Group #:	6159	Filter Type / Filter Area:	MCE 385 mm²
Lab Sample #:	9	Grid Opening Size:	0.01124
Client Sample #:	12	Area Examined:	0.06744 mm²
GRID BOX:	6 E 1	Magnification:	20,000
GRID ID:	6 BC	Accelerating Voltage:	100 KeV
# Grid Openings:	6	Analysis Date:	12/20/01

Analysis Performed By: MARK PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonadb Elements)
	No Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
	1 A3	NSD											
6B	2 D3	— ✓											
	3 E3	— ✓											
	4 D1	— ✓											
6C	5 E1	— ✓											
	6 D1	— ✓											

Struct = > 0.5µ > 5:1 Aspect Ratio

N= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate
least 20 unfolded or overlapped grid squares <5%
holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

ATC Associates

104 East 25 Street, New York, NY 10010

Phone: (212) 353-8280 Fax: (212) 353-8306

Attn: Mr. Fred Burkhardt
ATC Associates Inc.
104 East 25th Street
New York NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: Tribeca Towers
105 Duane Street, NY, NY

Received: 12/20/01 5:30:00 AM

ATC Group #: 6159

Analysis Date: 12/20/01

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	Volume	Area Analyzed	Non Asb	Asbestos Type(s)	Structures 0.5μ-5	Structures 5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)	Notes
04 6159 -1	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
05 6159 -2	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
06 6159 -3	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
07 6159 -4	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
08 6159 -5	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
09 6159 -6	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
10 6159 -7	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
11 6159 -8	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	

MARK PEYSAKHOV
Analyzed by:

MICHAEL A. GORYCKI, Ph.D.
Approved by:

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6159	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	1	**Grid Opening Size:**	0.01124
Client Sample #:	04	**Area Examined:**	0.06744 mm²
GRID BOX:	EF	**Magnification:**	20,000
GRID ID:	3	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/20/01

Analysis Performed By: MP

MARK PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	E3	ESD											
2	J3	—											
3	Q3	—											
4	E3	—											
5	J3	—											
6	Q3	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

V= Positive diffraction pattern properties conforming to laboratory identification criteria observed

V= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6159	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	2	**Grid Opening Size:**	0.01124
Client Sample #:	05	**Area Examined:**	0.06744 mm²
GRID BOX:	EET	**Magnification:**	20,000
GRID ID:	3C0	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/20/01

Analysis Performed By: MARK PEYSAKHOV

GO. No	GO. Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	C9	150											
2	AF	— "											
3	F3	— "											
4	F1	— "											
5	K1	— "											
6	R1	— "											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6159	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	3	**Grid Opening Size:**	0.01124
Client Sample #:	06	**Area Examined:**	0.06744 mm²
GRID BOX:	[illegible]	**Magnification:**	20,000
GRID ID:	[illegible]	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/20/01

Analysis Performed By: [signature]
MARK PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	X3	1150											
2	Q3	— "											
3	J3	— "											
4	D1	— "											
5	C1	— "											
6	A1	— "											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate
least 20 unfolded or overlapped grid squares <5%
holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6159	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	4	**Grid Opening Size:**	0.01124
Client Sample #:	07	**Area Examined:**	0.06744 mm²
GRID BOX:	6 E 7	**Magnification:**	20,000
GRID ID:	4 B C	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/20/01

Analysis Performed By: MARK PEYSAKHOV

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	BE	NSD											
2	EE	—											
3	JE	—											
4	DE	—											
5	C2	—											
6	P2	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate
least 20 unfolded or overlapped grid squares <5%
holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6159	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	5	**Grid Opening Size:**	0.01124
Client Sample #:	08	**Area Examined:**	0.06744 mm²
GRID BOX:	6 & 7	**Magnification:**	20,000
GRID ID:	6 D E	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/20/01

Analysis Performed By: MARK PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	J1	NSO											
2	A1	—											
3	C1	—											
4	B1	—											
5	E1	—											
6	J1	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 Intersections)
M = Matrix
NSO = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6159	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	6	**Grid Opening Size:**	0.01124
Client Sample #:	09	**Area Examined:**	0.06744 mm²
GRID BOX:	EET	**Magnification:**	20,000
GRID ID:	5HB	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/20/01

Analysis Performed By: MARK PEYSAKHOV

GO.		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	E1	1B0											
2	D1	— "											
3	C1	— "											
4	E6	— "											
5	J6	— "											
6	Q6	— "											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6159	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	7	**Grid Opening Size:**	0.01124
Client Sample #:	10	**Area Examined:**	0.06744 mm²
GRID BOX:	6 BY	**Magnification:**	20,000
GRID ID:	5 DE	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/20/01

Analysis Performed By: MARK PEYSAKHOV

GO. No	GO. Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	V4	√SO											
2	P4	—											
3	E4	—											
4	D1	—											
5	E1	—											
6	D1	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6159	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	8	**Grid Opening Size:**	0.01124
Client Sample #:	11	**Area Examined:**	0.06744 mm²
GRID BOX:	6ET	**Magnification:**	20,000
GRID ID:	5-6	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/20/01

Analysis Performed By: MARK PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	C2	NSD											
2	P2	- c											
3	C2	- c											
4	D1	- c											
5	E1	- c											
6	P1	- c											

Struct = > 0.5µ .> 5 : 1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6159	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	10	**Grid Opening Size:**	0.01124
Client Sample #:	13	**Area Examined:**	0.06744 mm²
GRID BOX:	[illegible]	**Magnification:**	20,000
GRID ID:	[illegible]	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/20/01

Analysis Performed By: [signature]
MARK PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonasb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	D2	NSD											
2	E2	—											
3	D2	—											
4	A7	—											
5	D7	—											
6	E7	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

January 4, 2002

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 6263:

Client: Related, Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: Apartment 11D
Samples received: 01/04/02

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites.

The results of the sample analyses may be found on the attached document. MMI TEM cassettes, Lot No. 00263916, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc.

Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC ASSOCIATES INC.

Ambient Air Sampling

Subject: Tribeca Towers
105 Duane Street

Re: Ambient Air Sampling

Apartment: 11D

From: Fred Burkhardt

Date: January 11, 2002

On January 3, 2002, ATC collected one ambient air sample from within your apartment to ascertain the presence or absence of airborne asbestos. The sample was collected and analyzed in accordance with the more stringent AHERA Transmission Electron Microscopy (TEM) method as set forth at 40 CFR Part 763, Subpart E, Appendix A.

In the absence of a specific ambient air standard for asbestos, regulatory agencies have been using the AHERA re-occupancy requirement following an asbestos abatement action. This standard of an average of less than 70 asbestos structures per square millimeter (<70 s/mm^2) per sample set is the most stringent reoccupancy requirement available, and has been designed to be protective of children following an asbestos project.

Based upon the analytical result for your apartment of **no asbestos structures detected**, which is below the AHERA clearance requirement, it is ATC's opinion that the ambient conditions at the time of testing meet an acceptable criterion for occupancy. If you have any questions or require additional explaination of the information presented please do not hesitate to call me at 212-353-8280 extension 343.

Thank You.

ATC Associates

104 East 25 Street, New York, NY 10010

Phone: (212) 353-8280 Fax: (212) 353-8306

Attn: Mr. Fred Burkhardt
ATC Associates Inc.
104 East 25th Street
New York NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: Tribeca Towers
105 Duane Street, New York, NY

Received: 1/4/02 8:00:00 AM

ATC Group #: 6263

Analysis Date: 1/4/02

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	*Volume*	*Area Analyzed*	*Non Asb*	*Asbestos Type(s)*	*Structures 0.5μ-5*	*Structures 5μ*	*Analytical Sensitivity (S/cc)*	*Asbestos Concentration (S/mm²)*	*Asbestos Concentration (S/cc)*	*Notes*
01 6263 -1	1450.00	0.0562	0	None Detected	0	0	0.0047	<17.79	<0.0047	

ROMAN PEYSAKHOV
Analyzed by: RP

MICHAEL A. GORYCKI, Ph.D.
Approved by:

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1450
Lab Group #:	6263	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	1	**Grid Opening Size:**	0.01124
Client Sample #:	01	**Area Examined:**	0.0562 mm²
GRID BOX:	7 28	**Magnification:**	20,000
GRID ID:	7PR	**Accelerating Voltage:**	100 KeV
# Grid Openings:	5	**Analysis Date:**	1/4/02

Analysis Performed By: RP

ROMAN PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	JZ	NSD											
2	QZ	"											
3	VZ	"											
4	QZ	"											
5	JZ	"											

7P

R

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5u
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page 1 of

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☑ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other

PROJECT INFORMATION

1. Client:	2. Project Name: Fabricon Tower	3. Project #: 09022-0014	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address: 705 Broadway, NYC	3a. Task #	4a. Air Sampler: B. Elanyobal	

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☑ TEM (0.45 micron MCE)	9. Type:
01/03/02	Apt. 11 D.	Cassette/Filter Manufacture: Lot #:	Cassette/Filter Manufacture: MMI Lot #: 00203916	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☑ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
01				Apt. 11 D	1205	1430	145	10.0	10.0	10.0	1450		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I. B. Elanyobal			
II	JD	1/4/02	8am
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RRN	1/4/02	11 AM
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: F. Burkhardt

27. Result To: F. Burkhardt
Beeper/Phone #'s

28. Comments:

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1

NYC 9/11 Public Portal Document

NYC-WTC_000104491

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

January 3, 2002

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 6255:

Client: Related, Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: Various Apartments
Samples received: 01/03/02

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites.

The results of the sample analyses may be found on the attached document. MMI TEM cassettes, Lot No. 00263916, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc.

Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Associates

104 East 25 Street, New York, NY 10010

Phone: (212) 353-8280 Fax: (212) 353-8306

Attn: Mr. Robert Lewin
ATC Associates Inc.
104 East 25th Street
New York NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: Tribeca Towers
105 Duane Street, New York, NY

Received: 1/3/02 8:00:00 AM

ATC Group #: 6255

Analysis Date: 1/3/02

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	*Volume*	*Area Analyzed*	*Non Asb*	*Asbestos Type(s)*	*Structures 0.5μ-5*	*Structures 5μ*	*Analytical Sensitivity (S/cc)*	*Asbestos Concentration (S/mm²)*	*Asbestos Concentration (S/cc)*	*Notes*
1 6255 -1	1547.00	0.0562	0	None Detected	0	0	0.0044	<17.79	<0.0044	
3 6255 -2	1360.00	0.0674	0	None Detected	0	0	0.0042	<14.83	<0.0042	

MARK PEYSAKHOV
Analyzed by:

MICHAEL A. GORYCKI, Ph.D.
Approved by:

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1547
Lab Group #:	6255	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	1	**Grid Opening Size:**	0.01124
Client Sample #:	1	**Area Examined:**	0.0562 mm²
GRID BOX:	226	**Magnification:**	20,000
GRID ID:	3/F3	**Accelerating Voltage:**	100 KeV
# Grid Openings:	5	**Analysis Date:**	1/3/02

Analysis Performed By: MARK PEYSAKHOV

GO.		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	E1	NSD											
2	P1	— ✓											
3	U1	— ✓											
4	E1	— ✓											
5	P1	— ✓											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1360
Lab Group #:	6255	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	2	**Grid Opening Size:**	0.01124
Client Sample #:	3	**Area Examined:**	0.06744 mm²
GRID BOX:	226	**Magnification:**	20,000
GRID ID:	EDR	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	1/3/02

Analysis Performed By: MARK PEYSAKHOV

GO. No	GO. Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	F1	NSD											
2	R1	—											
3	R1	—											
4	A9	—											
5	D8	—											
6	E8	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

√ = Positive diffraction pattern properties conforming to laboratory identification criteria observed

√ = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

ATC ASSOCIATES INC.

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #:	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address	3a. Task #	4a. Air Sampler:	

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE) Cassette/Filter Manufacture _____ Lot # _____	8. ☐ TEM (0.45 micron MCE) Cassette/Filter Manufacture _____ Lot # _____	9. Type: a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I			
II			
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name:	23. Date:	24. Time:
a. Analyzed By:		
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager:

27. Result To: _____
Beeper/Phone #'s _____

28. Comments:

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/01)

NYC 9/11 Public Portal Document

NYC-WTC_000104496

ATC ASSOCIATES INC.

Ambient Air Sampling

Subject: Tribeca Towers
105 Duane Street

Re: Ambient Air Sampling

Location: 10 Floor common hallway, 2nd floor Mechanical Room

From: Fred Burkhardt

Date: December 19, 2001

On December 12, 2001, ATC collected a total of ten ambient air samples, five from within the 10th floor common hallway and five within the 2nd floor mechanical room to ascertain the presence or absence of airborne asbestos. The samples were collected at the request of the New York City Department of Environmental Protection (NYCDEP) in response to a tenant complaint regarding hallway duct cleaning operations. Samples were analyzed in accordance with the more stringent AHERA Transmission Electron Microscopy (TEM) method as set forth at 40 CFR Part 763, Subpart E, Appendix A.

In the absence of a specific ambient air standard for asbestos, regulatory agencies have been using the AHERA re-occupancy requirement following an asbestos abatement action. This standard of an average of less than 70 asbestos structures per square millimeter (<70 s/mm^2) per sample set is the most stringent reoccupancy requirement available, and has been designed to be protective of children following an asbestos project.

Based upon the analytical results from both the 10th floor hallway and 2nd floor mechanical room of **no asbestos structures detected**, which is below the AHERA clearance requirement. It is ATC's opinion that duct-cleaning activities did not result in elevated asbestos levels within those spaces, and the ambient conditions sampled at the time of testing meet an acceptable criterion for occupancy. If you have any questions or require additional explaination of the information presented please do not hesitate to call me at 212-353-8280 extension 343.

Thank You.

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

December 13, 2001

ATC Associates Inc.
104 East 25th Street
New York, NY 10010
Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 6087:

Client: Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: 10th Floor and Mechanical Room
Samples received: 12/13/01

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites.

The results of the sample analyses may be found on the attached document. MMI TEM cassettes, Lot No. 0025916, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. If post-abatement inside samples pass, the response action may be considered to have been completed. The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc. Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Associates

104 East 25 Street, New York, NY 10010

Phone: (212) 353-8280 Fax: (212) 353-8306

Attn: Mr. Benjamin Sallemi
ATC Associates Inc
104 East 25th Street
New York NY 10010

Fax: (212) 353-8306 **Phone:** (212) 353-8280

Project: Tribeca Towers
105 Duane Street, NY, NY

Received: 12/13/01 8:00:00 AM

ATC Group #: 6087

Analysis Date: 12/13/01

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	*Volume*	*Area Analyzed*	*Non Asb*	*Asbestos Type(s)*	*Structures 0.5μ-5*	*Structures 5μ*	*Analytical Sensitivity (S/cc)*	*Asbestos Concentration (S/mm²)*	*Asbestos Concentration (S/cc)*	*Notes*
1 6087 -1	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
2 6087 -2	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
3 6087 -3	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
4 6087 -4	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
5 6087 -5	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
6 6087 -6	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
7 6087 -7	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
8 6087 -8	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	

MARK PEYSAKHOV
Analyzed by: RRuy

MICHAEL A. GORYCKI, Ph.D.
Approved by: Michael A Gorycki

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

Attn: Mr. Benjamin Sallemi
ATC Associates Inc
104 East 25th Street
New York NY 10010
Fax: (212) 353-8306 Phone: (212) 353-8280

Received: 12/13/01 8:00:00 AM
ATC Group #: 6087
Analysis Date: 12/13/01

Project: Tribeca Towers
105 Duane Street, NY, NY

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	Volume	Area Analyzed	Non Asb	Asbestos Type(s)	Structures 0.5μ-5	Structures 5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)	Notes
9 6087 -9	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
10 6087 -10	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	

MARK PEYSAKHOV
Analyzed by: RRy

MICHAEL A. GORYCKI, Ph.D.
Approved by:

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6087	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	1	**Grid Opening Size:**	0.01124
Client Sample #:	1	**Area Examined:**	0.06744 mm²
GRID BOX:	6F6	**Magnification:**	20,000
GRID ID:	3OK	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/13/01

Analysis Performed By: RP
MARK PEYSAKHOV

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonasb Elements)
1	N2	NSD											
2	P2	"											
3	I2	"											
4	I2	"											
5	P2	"											
6	V2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 Intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6087	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	2	**Grid Opening Size:**	0.01124
Client Sample #:	2	**Area Examined:**	0.06744 mm²
GRID BOX:	GEE	**Magnification:**	20,000
GRID ID:	3 5 E X	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/13/01

Analysis Performed By: RP

MARK PEYSAKHOV

GO		Structure	Structure Type				Length		ID of Structure N or ✓				EDS
No	Coord	No	F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/NC	(Nonadb Elements)
1	J2	NSD											
2	Q3	"											
3	X2	"											
4	X2	"											
5	Q2	"											
6	J2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

✓= Positive diffraction pattern properties conforming to laboratory identification criteria observed

✓= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6087	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	3	**Grid Opening Size:**	0.01124
Client Sample #:	3	**Area Examined:**	0.06744 mm²
GRID BOX:	66 5	**Magnification:**	20,000
GRID ID:	E ccc D	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/13/01

Analysis Performed By: RP
MARK PEYSAKHOV

GO.		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	J2	NSD											
2	Q3	4											
3	X2	4											
4	I2	11											
5	P2	11											
6	X2	11											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6087	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	4	**Grid Opening Size:**	0.01124
Client Sample #:	4	**Area Examined:**	0.06744 mm²
GRID BOX:	6F6	**Magnification:**	20,000
GRID ID:	F2S	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/13/01

Analysis Performed By: RP
MARK PEYSAKHOV

GO		Structure	Structure Type				Length		ID of Structure N or √				EDS
No	Coord	No	F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	(Nonadb Elements)
1	I2	NSD											
2	J2	"											
3	Q2	"											
4	I2	"											
5	P2	"											
6	V2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6087	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	5	**Grid Opening Size:**	0.01124
Client Sample #:	5	**Area Examined:**	0.06744 mm²
GRID BOX:	6 4 8	**Magnification:**	20,000
GRID ID:	5 C R	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/13/01

Analysis Performed By: RP
MARK PEYSAKHOV

GO.		Structure	Structure Type				Length		ID of Structure N or √				EDS
No	Coord	No	F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	(Nonacb Elements)
1	J2	NSD											
2	P2	"											
3	P2	"											
4	I2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5u
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6087	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	6	**Grid Opening Size:**	0.01124
Client Sample #:	6	**Area Examined:**	0.06744 mm²
GRID BOX:	GF8	**Magnification:**	20,000
GRID ID:	5PU	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/13/01

Analysis Performed By: MARK PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	E6	NSD											
2	P6	—											
3	U6	—											
4	R1	—											
5	R1	—											
6	Y1	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

N= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 Intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6087	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	7	**Grid Opening Size:**	0.01124
Client Sample #:	7	**Area Examined:**	0.06744 mm²
GRID BOX:	[illegible]	**Magnification:**	20,000
GRID ID:	[illegible]	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/13/01

Analysis Performed By: [signature]
MARK PEYSAKHOV

GO. No	GO. Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	J8	NSD											
2	9G	—											
3	K8	—											
4	E1	—											
5	P1	—											
6	U1	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6087	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	8	**Grid Opening Size:**	0.01124
Client Sample #:	8	**Area Examined:**	0.06744 mm²
GRID BOX:	6 F 5	**Magnification:**	20,000
GRID ID:	6 W D	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/13/01

Analysis Performed By: MARK PEYSAKHOV

GO. No	GO. Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonacb Elements)
1	F1	NSD											
2	K1	— ✓											
3	R1	— ✓											
4	P1	— ✓											
5	D1	— ✓											
6	E1	— ✓											

Struct = > 0.5µ > 5:1 Aspect Ratio

√ = Positive diffraction pattern properties conforming to laboratory identification criteria observed

√ = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthopnyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6087	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	9	**Grid Opening Size:**	0.01124
Client Sample #:	9	**Area Examined:**	0.06744 mm²
GRID BOX:	6E6	**Magnification:**	20,000
GRID ID:	6E9	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/13/01

Analysis Performed By: MARK PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	A1	NSD											
2	D1	—											
3	E1	—											
4	E3	—											
5	J3	—											
6	Q3	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 Intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6087	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	10	**Grid Opening Size:**	0.01124
Client Sample #:	10	**Area Examined:**	0.06744 mm²
GRID BOX:	6F E	**Magnification:**	20.000
GRID ID:	7 L N	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/13/01

Analysis Performed By: _____
MARK PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonasb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	V1	NSD											
2	F1	—											
3	C1	—											
4	E8	—											
5	J8	—											
6	A8	—											

Struct = > 0.5µ .> 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-identified					

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page 2 of 2

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

Client:	2. Project Name: 105 Duane Street	3. Project #	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address: 105 Duane Street		4a. Air Sampler: Edward Toussaint	

Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
12/12/13	1st floor & mechanical rm	Cassette/Filter Manufacture: ____ Lot #: ____	Cassette/Filter Manufacture: AC Lot #: 00265216	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☑ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
7		✓		IN Mechanical Rm Storage Area.	1031	0041	130	10	10	10	130		
8		✓		IN Mechanical Rm Near Cable Antenna	1032	0042	130	10	10	10	130		
9		✓		IN Mechanical Rm East of Health club #1 unit	1033	0043	130	10	10	10	130		
10		✓		IN Mechanical Room North of Exercise Rm #2 unit	1034	0044	130	10	10	10	130		
11			✓	Entrance to bldg 105 Duane st revolving dr.	0000	0210	130	10	10	10	130		
12			✓	North side on garden area IN 105 Duane st	0001	0211	130	10	10	10	130		

CHAIN OF CUSTODY

Relinquished By:	19. Received By:	20. Date:	21. Time:
Edward Toussaint			
	JD	12/13/13	9am

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RDy	12/13	9:30
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

ATC Project Manager: Fred Burkhardt

27. Result To: Carl Lutelmfeld (Dep)
Beeper/Phone #'s: 1 718 595 3749

28. Comments: All inside 1-10 are aggressive samples

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NYC 9/11 Public Portal Document

NYC-WTC_000104511

NYC-WTC_000104512

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

66651 10/17 66654-66670

PROJECT INFORMATION

1. Client:	2. Project Name: 105 Duane Street	3. Project #:	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address: 105 Duane Street	3a. Task #	4a. Air Sampler: Harold Rousseau	HP #125

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
10/12/01	Floor 8 & 10	Cassette/Filter Manufacture: ____ Lot #: ____	Cassette/Filter Manufacture: 916 Lot #: 008265	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
111		✓		10th floor West of HPT #105 door	10 09	0010	130	10	10	10	1300		
112		✓		10th floor EAST corridor from	10 01	0011	130	10	10	10	1300		
113		✓		10th floor Between #10D & 10F doors	10 02	0012	130	10	10	10	1300		
114		✓		10th floor Hallway under vent.	10 03	0013	130	10	10	10	1300		
115		✓		10th floor South of HPT #10A door.	10 04	0014	130	10	10	10	1300		
116		✓		Mechanical Room Near slop sink.	10 30	00 40	130	10	10	10	1300		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I Harold Rousseau			
II	JP	10/18/01	8am
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RRY	12/13	9:30
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: Hugo Buckhardt

27. Result To: Carl Lutchmansingh
Beeper/Phone #'s 917 518 595 3749

28. Comments:

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/01)

NYC-WTC_000104513

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

AUDIT!

0087

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

Client:	2. Project Name: 105 Reade Street	3. Project #:	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address: 105 Reade Street		4a. Air Sampler: Harold Toussaint	HP-125

Date:	6. Abatement Location: N/A	7. ☐ PCM (0.8 micron MCE) Cassette/Filter Manufacture ____ Lot # ____	8. ☐ TEM (0.45 micron MCE) Cassette/Filter Manufacture 916 Lot # 00-2639 16	9. Type: a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☒ Ambient h. ☐ Other
2/12/01	Non Mechanical			

DAILY AIR SAMPLE RECORD

Sample I.D. Number	11. Pump Number	12. Sample Location: 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock): 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.): 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
111				Field Blank 30 Sec									
112				Field Blank 30 Sec									
113			✓	South side of garden	00 09	02 12	130	10	10	10	1300		
				West of 105 Reade St									
114			✓	10 feet from back entrance	00 09	02 13	130	10	10	10	1300		
				West of 105 Reade Street									
115			✓	20 feet North of	00 09	02 14	130	10	10	10	1300		
				East entrance door at 105									
				Reade Street									

CHAIN OF CUSTODY

Relinquished By:	19. Received By:	20. Date:	21. Time:
Harold Toussaint			
	JP	2/12/01	5:00

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TENI	23. Date:	24. Time:
a. Analyzed By: RRW	12/13	9:30
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

ATC Project Manager: Fred Eichhardt

27. Result To: Carl Eichhardt
Beeper/Phone #'s FAX 1718-575-3749

28. Comments: Samples 1-10 are aggressive samples. Sample 10-15 are common outside samples.

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/00)

NYC-WTC_000104514

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

6087 10/17 66651-66670

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name: 105 DUANE STREET	3. Project #:	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address: 105 DUANE Street	3a. Task #	4a. Air Sampler: Harold TOUSSAINT	111 125

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
12/12/01	10th Floor & Mechanical	Cassette/Filter Manufacture: ____ Lot #: ____	Cassette/Filter Manufacture: 916 Lot #: 00463 916	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
A1		✓		On 10th floor West of APT #10J door	10 00	0010	130	10	10	10	1300		
A2		✓		On 10th floor EAST of CONDACTOR ROOM	10 01	0011	130	10	10	10	1300		
A3		✓		On 10th floor Between APT #10G & 10F doors	10 02	0012	130	10	10	10	1300		
A4		✓		On 10th floor Hallway closer Vent.	10 03	0013	130	10	10	10	1300		
A5		✓		On 10th floor South of APT #10A door.	10 04	0014	130	10	10	10	1300		
A6		✓		On Mechanical Room Mens Slop Sink.	10 30	0040	130	10	10	10	1300		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I Harold Toussaint			
II	JP	12/13/01	8am
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RRY	12/13	9:30
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: Fred Burkhardt

27. Result To: Carl Lutchman/Per
Beeper/Phone #'s 718 595 3749

28. Comments:

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/01)

NYC-WTC_000104515

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page 2 of 2

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name: 105 Duane Street	3. Project #	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address: 105 Duane Street		4a. Air Sampler: Harold Tussaint	

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
12/12/01	Mechanical Rm	Cassette/Filter Manufacture _____ Lot # _____	Cassette/Filter Manufacture 216 Lot # 00263216	a. ☐ Background- b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☒ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
117		✓		IN Mechanical Rm Storage Area.	1031	0041	130	10	10	10	1300		
118		✓		IN Mechanical Rm Near Cable Antenna	1032	0042	130	10	10	10	1300		
119		✓		IN Mechanical Rm East of Health club #1 unit	1033	0043	130	10	10	10	1300		
1110		✓		IN Mechanical Room North of Exercise RM #2 unit	1034	0044	130	10	10	10	130		
1111			✓	Entrance to bldg 105 Duane st Revolving dr.	0000	0210	130	10	10	10	1300		
1112			✓	North Side on garden then IN 105 Duane st	0001	0211	130	10	10	10	1300		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I Harold Tussaint			
II	JD	12/13/01	9:00
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RDY	12/13	9:30
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

26. ATC Project Manager: Fred Kirkhardt

27. Result To: Carl Whitingdale (?)
Beeper/Phone #'s 1718 595 3149

28. Comments: All inside 1-10 are aggressive samples

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/00)

NYC-WTC_000104516

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

6087

Page 3 of 3

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name: 105 Greene Street	3. Project #	4. Project Monitor:	4c. Rotameter Number:
	2a. Project Address: 105 Greene Street		4a. Air Sampler: Harold Teissaint	HP-325

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
12/12/01	floor & mechanical rm	Cassette/Filter Manufacture: ____ Lot #: ____	Cassette/Filter Manufacture: 916 Lot #: 00-263 916	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☒ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
A16				Field Blank 30 sec									
A17				Field Blank 30 sec									
A13			✓	South side of garden	00 02	0212	130	10	10	10	1300		
A14			✓	10 feet from back entrance door at 105 Greene Street	00 03	0213	130	10	10	10	1300		
A15			✓	20 feet North of back entrance door at 105 Greene Street	00 01	0214	130	10	10	10	1300		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I Harold Teissaint			
II	JP	12/13/01	8:00
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RRW	12/13	9:30
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

26. ATC Project Manager: Paul Lichtenstein

27. Result To: Paul Lichtenstein
Beeper/Phone #'s 7A 1718-597-3749

28. Comments: Samples 1-10 are aggressive samples. Sample 10 [illegible] Blank samples

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/00)

ATC ASSOCIATES INC.

Ambient Air Sampling

Subject: Tribeca Towers
105 Duane Street

Re: Ambient Air Sampling

Location: Common Hallways during Duct Cleaning, 2nd floor Mechanical Room

From: Fred Burkhardt

Date: January 4, 2002

On December 27, 28 & 29, 2001, ATC collected a total of fourteen ambient air samples, ten from within common hallways and four within the 2nd floor mechanical room to ascertain the presence or absence of airborne asbestos. The sample methodology, quantity, and location were agreed upon between Related Management, ATC and H.A. Bader Consultants Inc. the tenants associations consultant. Samples were analyzed in accordance with the more stringent AHERA Transmission Electron Microscopy (TEM) method as set forth at 40 CFR Part 763, Subpart E, Appendix A.

In the absence of a specific ambient air standard for asbestos, regulatory agencies have been using the AHERA re-occupancy requirement following an asbestos abatement action. This standard of an average of less than 70 asbestos structures per square millimeter (<70 s/mm^2) per sample set is the most stringent reoccupancy requirement available, and has been designed to be protective of children following an asbestos project.

Based upon the analytical results from the 2nd, 5th, 10th, 15th, 20th, 25th, 27th, 34th, 41st floor hallways and 2nd floor mechanical room of **no asbestos structures detected**, which is below the AHERA clearance requirement. It is ATC's opinion that duct-cleaning activities did not result in elevated asbestos levels within those spaces, and the ambient conditions sampled are representative of the building at the time of testing and meet an acceptable criterion for occupancy. If you have any questions or require additional explaination of the information presented please do not hesitate to call me at 212-353-8280 extension 343.

Thank You.

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

December 28, 2001

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 6217:

Client: Related Management, Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: Various Floors
Samples received: 12/27/01

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites.

The results of the sample analyses may be found on the attached document. Millipore TEM cassettes, Lot No. 98307617, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc.

Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Associates

104 East 25 Street, New York, NY 10010

Phone: (212) 353-8280 Fax: (212) 353-8306

Attn: Mr. Robert Lewin
ATC Associates Inc.
104 East 25th Street
New York NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: Tribeca Towers

Received: 12/28/01 4:30:00 PM

ATC Group #: 6217

Analysis Date: 12/28/01

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	*Volume*	*Area Analyzed*	*Non Asb*	*Asbestos Type(s)*	*Structures* 0.5μ-5	*Structures* 5μ	*Analytical Sensitivity (S/cc)*	*Asbestos Concentration (S/mm²)*	*Asbestos Concentration (S/cc)*	*Notes*
003 6217 -1	1650.00	0.0562	0	None Detected	0	0	0.0042	<17.79	<0.0042	
004 6217 -2	1680.00	0.0562	0	None Detected	0	0	0.0041	<17.79	<0.0041	
005 6217 -3	1545.00	0.0562	0	None Detected	0	0	0.0044	<17.79	<0.0044	
006 6217 -4	1633.00	0.0562	0	None Detected	0	0	0.0042	<17.79	<0.0042	
007 6217 -5	1606.00	0.0562	0	None Detected	0	0	0.0043	<17.79	<0.0043	
008 6217 -6	1500.00	0.0562	0	None Detected	0	0	0.0046	<17.79	<0.0046	

MARK PEYSAKHOV
Analyzed by:

MICHAEL A. GORYCKI, Ph.D.
Approved by:

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1650
Lab Group #:	6217	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	1	**Grid Opening Size:**	0.01124
Client Sample #:	003	**Area Examined:**	0.0562 mm²
GRID BOX:	2-5	**Magnification:**	20,000
GRID ID:	6SC	**Accelerating Voltage:**	100 KeV
# Grid Openings:	5	**Analysis Date:**	12/28/01

Analysis Performed By: MARK PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or √				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	C9	NSD											
2	M9	—											
3	N9	—											
4	Y1	—											
5	R1	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 Intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1680
Lab Group #:	6217	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	2	**Grid Opening Size:**	0.01124
Client Sample #:	004	**Area Examined:**	0.0562 mm²
GRID BOX:	7-5	**Magnification:**	20,000
GRID ID:	6D-5	**Accelerating Voltage:**	100 KeV
# Grid Openings:	5	**Analysis Date:**	12/28/01

Analysis Performed By: MARK PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	1E8	NSD											
2	3E8	—											
3	9E8	—											
4	1A8	—											
5	3D8	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 Intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1545
Lab Group #:	6217	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	3	**Grid Opening Size:**	0.01124
Client Sample #:	005	**Area Examined:**	0.0562 mm²
GRID BOX:	715	**Magnification:**	20,000
GRID ID:	7A3	**Accelerating Voltage:**	100 KeV
# Grid Openings:	5	**Analysis Date:**	12/28/01

Analysis Performed By: MARK PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	Q3	NSD											
2	J3	—											
3	E3	—											
4	R2	—											
5	Y2	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

N = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1633
Lab Group #:	6217	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	4	**Grid Opening Size:**	0.01124
Client Sample #:	006	**Area Examined:**	0.0562 mm²
GRID BOX:	715	**Magnification:**	20,000
GRID ID:	200	**Accelerating Voltage:**	100 KeV
# Grid Openings:	5	**Analysis Date:**	12/28/01

Analysis Performed By: _____
MARK PEYSAKHOV

GO. No	GO. Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	D1	NSD											
2	A1	—											
3	A1	—											
4	C7	—											
5	A7	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

√ = Positive diffraction pattern properties conforming to laboratory identification criteria observed

√ = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1606
Lab Group #:	6217	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	5	**Grid Opening Size:**	0.01124
Client Sample #:	007	**Area Examined:**	0.0562 mm²
GRID BOX:	7-5	**Magnification:**	20,000
GRID ID:	7E8A	**Accelerating Voltage:**	100 KeV
# Grid Openings:	5	**Analysis Date:**	12/28/01

Analysis Performed By: _____
MARK PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or √ Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	D1	NSD											
2	C1	—											
3	D1	—											
4	Y1	—											
5	R1	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

√= Positive diffraction pattern properties conforming to laboratory identification criteria observed

√= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1500
Lab Group #:	6217	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	6	**Grid Opening Size:**	0.01124
Client Sample #:	008	**Area Examined:**	0.0562 mm²
GRID BOX:	7-5	**Magnification:**	20,000
GRID ID:	8 3 C	**Accelerating Voltage:**	100 KeV
# Grid Openings:	5	**Analysis Date:**	12/28/01

Analysis Performed By: MARK PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonasb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
1	K1	NSD											
2	R1	—											
3	K1	—											
4	D1	—											
5	E1	—											

Struct = > 0.5µ > 5:1 Aspect Ratio

V= Positive diffraction pattern properties conforming to laboratory identification criteria observed

V= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5u
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

ATC ASSOCIATES INC.

Page 1 of 1

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
Roland Management	Tribeca Tower		N/A	HR-121
	2a. Project Address: 165 Duane St. NY	3a. Task # 0001	4a. Air Sampler: Kenneth S.	

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☒ TEM (0.45 micron MCE)	9. Type:
12/27/01	165 Duane Street	Cassette/Filter Manufacture _____ Lot # _____	Cassette/Filter Manufacture Millipore Lot # 333 [illegible]	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☒ Ambient h. ☒ Other [illegible]

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location: 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock): 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.): 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
001				Field Blank									
002				Field Blank									
003	01			2nd Flor, Mechanical Equipment Room East	0923	253	330	5	5	5	660		
004	02			20th Floor Hallway by Duct	0919	247	320	5	5.5	5.2	640		
005	03			27th Floor Hallway by Duct	0919	238	309	5	5	5	618		
006	04			34th Floor Hallway by Duct	0923	230	297	5	6	5.5	623		
007	05			41st Floor Hallway by Duct	0938	225	292	5	6	5.5	660		
008	06			48th Floor Hallway by Duct	1000	300	300	5	5	5	600		

CHAIN OF CUSTODY

	18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I	[illegible]		12/27/01	[illegible]
II		[illegible]	[illegible]	[illegible]
III				

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name:	23. Date:	24. Time:
a. Analyzed By:		
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

26. ATC Project Manager: F. Bernardo (# 313)

27. Result To: Pandel and Bernardo
Beeper/Phone #'s [illegible]

28. Comments:

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

[redacted] WHITE - [redacted] YELLOW - Client/Report [redacted] PINK - Lab [redacted] GOLDENROD - Field [redacted] NY-[redacted]

NYC 9/11 Public Portal Document

NYC-WTC_000104526

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

DACT 6

December 30, 2001

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 6226:

Client: Tribeca Towers, Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: Floors 37 to Lobby
Samples received: 12/28/01

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites.

The results of the sample analyses may be found on the attached document. MMI TEM cassettes, Lot No. 00263916, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc.

Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Associates

104 East 25 Street, New York, NY 10010

Phone: (212) 353-8280 Fax: (212) 353-8306

Attn: Mr. Fred Burkhardt
ATC Associates Inc.
104 East 25th Street
New York NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: Tribeca Towers
105 Duane Street, New York, NY

Received: 12/28/01 4:30:00 PM

ATC Group #: 6226

Analysis Date: 12/30/01

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	Volume	Area Analyzed	Non Asb	Asbestos Type(s)	Structures 0.5μ-5	Structures 5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm²)	Asbestos Concentration (S/cc)	Notes
003 6226 -1	1770.00	0.0450	0	None Detected	0	0	0.0048	<22.24	<0.0048	
004 6226 -2	1750.00	0.0450	0	None Detected	0	0	0.0049	<22.24	<0.0049	
005 6226 -3	1925.00	0.0450	0	None Detected	0	0	0.0044	<22.24	<0.0044	
006 6226 -4	1745.00	0.0450	0	None Detected	0	0	0.0049	<22.24	<0.0049	
007 6226 -5	1715.00	0.0562	0	None Detected	0	0	0.0040	<17.79	<0.0040	
008 6226 -6	1699.00	0.0562	0	None Detected	0	0	0.0040	<17.79	<0.0040	

ROMAN PEYSAKHOV
Analyzed by: RPey

MICHAEL A. GORYCKI, Ph.D.
Approved by: Michael A. Goryck

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1770
Lab Group #:	6226	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	1	**Grid Opening Size:**	0.01124
Client Sample #:	003	**Area Examined:**	0.04496 mm²
GRID BOX:	721	**Magnification:**	20,000
GRID ID:	3A/B	**Accelerating Voltage:**	100 KeV
# Grid Openings:	4	**Analysis Date:**	12/30/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO.		Structure	Structure Type				Length		ID of Structure N or V				EDS
No	Coord	No	F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	(Nonadb Elements)
3A 1	I2	NSD											
2	J2	"											
3	E8	"											
4	I8	"											
3B													

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 Intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1750
Lab Group #:	6226	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	2	**Grid Opening Size:**	0.01124
Client Sample #:	004	**Area Examined:**	0.04496 mm²
GRID BOX:	121	**Magnification:**	20,000
GRID ID:	3	**Accelerating Voltage:**	100 KeV
# Grid Openings:	4	**Analysis Date:**	12/30/01

Analysis Performed By: RP

ROMAN PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonadb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
C 1	P2	NSD											
2	I2	"											
3	R2	"											
4	Q2	"											
D													

Struct = > 0.5µ > 5:1 Aspect Ratio

V= Positive diffraction pattern properties conforming to laboratory identification criteria observed

V= EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1925
Lab Group #:	6226	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	3	**Grid Opening Size:**	0.01124
Client Sample #:	005	**Area Examined:**	0.04496 mm²
GRID BOX:	7Z1	**Magnification:**	20,000
GRID ID:	3EMA	**Accelerating Voltage:**	100 KeV
# Grid Openings:	4	**Analysis Date:**	12/30/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO		Structure No	Structure Type				Length		ID of Structure N or V				EDS (Nonasb Elements)
No	Coord		F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	
3E 1	J2	NSD											
2	P1	"											
3	I2	"											
4	P2	"											
4A													

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 Intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5L
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1745
Lab Group #:	6226	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	4	**Grid Opening Size:**	0.01124
Client Sample #:	006	**Area Examined:**	0.04496 mm²
GRID BOX:	721	**Magnification:**	20,000
GRID ID:	4BC	**Accelerating Voltage:**	100 KeV
# Grid Openings:	4	**Analysis Date:**	12/30/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO. No	Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonasb Elements)
1B 1	V1	NSD											
2	P1	"											
3	Q3	"											
4	P1	"											
4C													

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

√ = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1715
Lab Group #:	6226	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	5	**Grid Opening Size:**	0.01124
Client Sample #:	007	**Area Examined:**	0.04496 mm²
GRID BOX:	721	**Magnification:**	20,000
GRID ID:	4QE	**Accelerating Voltage:**	100 KeV
# Grid Openings:	45	**Analysis Date:**	12/30/01

Analysis Performed By: RP

ROMAN PEYSAKHOV

GO.		Structure	Structure Type				Length		ID of Structure N or √				EDS
No	Coord	No	F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	(Nonadb Elements)
1	Q2	NSD											
2	J1	"											
3	I1	"											
4	J1	"											
5	Q2	"											

D

E

Struct = > 0.5µ > 5:1 Aspect Ratio

√ = Positive diffraction pattern properties conforming to laboratory identification criteria observed

√ = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber

B = Bundle (<3 fibers <1 fiber diameter apart

C = Cluster (>3 intersections)

M = Matrix

NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES

Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5u
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1699
Lab Group #:	6226	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	6	**Grid Opening Size:**	0.01124
Client Sample #:	008	**Area Examined:**	0.0562 mm²
GRID BOX:	TZ1	**Magnification:**	20,000
GRID ID:	5AB	**Accelerating Voltage:**	100 KeV
# Grid Openings:	5	**Analysis Date:**	12/30/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO.		Structure	Structure Type				Length		ID of Structure N or V				EDS
No	Coord	No	F	B	C	M	>=05 µ <5µ	>=5µ	Chrys	Amphibole	Nonasb	Ambig/ND	(Nonadb Elements)
5A 1	J2	NSD											
2	E2	"											
3	D2	"											
4	P2	"											
5	J2	"											
5B													

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page 1 of 1

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name: Tribeca Towers	3. Project #:	4. Project Monitor: Fred Burkhardt	4c. Rotameter Number: HP-121
	2a. Project Address: 105 Duane St., NY	3a. Task #: 0001	4a. Air Sampler: Ronald Pantol	

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☒ TEM (0.45 micron MCE)	9. Type:
12-28-2001	floors 37 ↓ to lobby	Cassette/Filter Manufacture: _____ Lot #: _____	Cassette/Filter Manufacture: Millipore Lot #: 00263916 / #916	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☒ Ambient h. ☒ Other Not conducted

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location: 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock): 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.): 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
001				Field Blank ✓ sealed / Box									
002				Field Blank opened 30 sec. / ambient air									
003	01			2nd fl., MER, adjacent to laundry room drain / sink	907	1501		5	5	5	1700		
004	02			20th floor, Hallway common area	913	1503		5	5	5	[illegible]		
005	03			15th floor, Hallway common area	925	1515		5	6	5.5	[illegible]		
006	04			10th floor, Hallway common area	927	1516		5	5	5	1745		
007	05			5th floor Hallway common area	936	1519		5	5	5	1775		
008	06			25th floor, Hallway common area.	1013	1522		5	6	5.5	1699		

CHAIN OF CUSTODY

	18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I	[illegible]		12/28/01	16:[illegible]
II		[illegible]	[illegible]	[illegible]
III				

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC-TEM	23. Date:	24. Time:
a. Analyzed By: RKly	12/30	14:00
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: F. Burkhardt

27. Result To: Fred Burkhardt and R. Pantol
Beeper/Phone #'s 646-772-1164

28. Comments:

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field NY-1

NYC 9/11 Public Portal Document

NYC-WTC_000104535

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

104 East 25th Street
New York, New York 10010
www.atc-enviro.com
212.353.8280
Fax 212.353.8306

December 30, 2001

ATC Associates Inc.
104 East 25th Street
New York, NY 10010

Attn: Mr. Fred Burkhardt

Re: Report of TEM Analysis

Dear Mr. Burkhardt:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 6237:

Client: Tribeca Towers, Tribeca Towers
Project Name: 105 Duane Street, NY, NY
Location: 2nd Floor Mechanical Room
Samples received: 12/30/01

These results will confirm and document the data transmitted today to your office. The analyses were performed in strict conformance with the methodology of the AHERA Final Rule (CFR October 30, 1987) for clearance of abatement sites.

The results of the sample analyses may be found on the attached document. MMI TEM cassettes, Lot No. 00263916, were used.

Results reported as Struct/cc are a function of air volume collected in the field and are, as such, not verifiable by this laboratory. This report may be reproduced only in its entirety and not without prior permission of this laboratory. The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy.

We are pleased to note that our TEM lab has received full accreditation from NVLAP, as is currently required for recognized analysis of TEM air samples for AHERA projects, and also approval under the NY State DOH ELAP program. These analyses were performed by ATC d/b/a ATC Associates Inc.

Please contact me regarding any questions relating to these materials.

Very truly yours,

Michael A. Gorycki, Ph.D.
Director of Electron Microscopy

ATC Associates

104 East 25 Street, New York, NY 10010

Phone: (212) 353-8280 Fax: (212) 353-8306

Attn: Mr. Fred Burkhardt
ATC Associates Inc.
104 East 25th Street
New York NY 10010

Fax: (212) 353-3599 **Phone:** (212) 353-8280

Project: Tribeca Towers
105 Duane Street, New York, NY

Received: 12/30/01 5:00:00 AM

ATC Group #: 6237

Analysis Date: 12/30/01

Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) Performed by EPA 40 CFR Part 763 Final Rule (AHERA)

Sample	*Volume*	*Area Analyzed*	*Non Asb*	*Asbestos Type(s)*	*Structures*		*Analytical Sensitivity*	*Asbestos Concentration*		*Notes*
					0.5μ-5	*5μ*	*(S/cc)*	*(S/mm²)*	*(S/cc)*	
01 6237 -1	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	
02 6237 -2	1300.00	0.0674	0	None Detected	0	0	0.0044	<14.83	<0.0044	

ROMAN PEYSAKHOV
Analyzed by: RRy

MICHAEL A. GORYCKI, Ph.D
Approved by:

Disclaimer: The laboratory is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. This lab is only responsible for data reported in structures/mm². This report may not be reproduced, except in full, without written approval by ATC Associates Inc. This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. This reports relates only to the samples reported above. Quality control data (including 95% confidence limits and laboratory and analysis' accuracy and precision) is available upon request.

Accredited for NVLAP PLM/TEM #101187-0, NY State ELAP #10879

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6237	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	1	**Grid Opening Size:**	0.01124
Client Sample #:	01	**Area Examined:**	0.06744 mm²
GRID BOX:	721	**Magnification:**	20,000
GRID ID:	5CD	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/30/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	ID of Structure N or V Chrys	Amphibole	Nonasb	Ambig/ND	EDS (Nonasb Elements)
1	I2	NSD											
2	P2	"											
3	V2	"											
4	Q2	"											
5	I2	"											
6	P2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

N = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 Intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:
<50% undissolved filter, overlapped or folded
<10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

TEM Asbestos (air) Count Sheet

Client Name:	ATC	**Volume (liters):**	1300
Lab Group #:	6237	**Filter Type / Filter Area:**	MCE 385 mm²
Lab Sample #:	2	**Grid Opening Size:**	0.01124
Client Sample #:	02	**Area Examined:**	0.06744 mm²
GRID BOX:	721	**Magnification:**	20,000
GRID ID:	SEGA	**Accelerating Voltage:**	100 KeV
# Grid Openings:	6	**Analysis Date:**	12/30/01

Analysis Performed By: RP
ROMAN PEYSAKHOV

GO No	GO Coord	Structure No	Structure Type F	B	C	M	Length >=05 µ <5µ	>=5µ	Chrys	ID of Structure N or V Amphibole	Nonasb	Ambig/ND	EDS (Nonadb Elements)
1	I2	NSD											
2	J2	"											
3	Q3	"											
4	X2	"											
5	P2	"											
6	I2	"											

Struct = > 0.5µ > 5:1 Aspect Ratio

V = Positive diffraction pattern properties conforming to laboratory identification criteria observed

V = EDS spectrum conforming to laboratory identification criteria observed

F = Single Fiber
B = Bundle (<3 fibers <1 fiber diameter apart
C = Cluster (>3 intersections)
M = Matrix
NSD = No Structures Detected

Grid acceptance:

<50% undissolved filter, overlapped or folded <10% particulate coverage >50% coverage ate least 20 unfolded or overlapped grid squares <5% holes or opaque areas

AMPHIBOLES
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

Totals

	F	B	C	M	>5µ
Chrysotile					
Amphibole					
Ambiguous					
Non-Asbestos					
Non-Identified					

ATC ASSOCIATES INC.

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

6237 2/4 68912-68915

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
TREBECA TOWERS	TREBECA TOWERS			SD-108
	2a. Project Address: 105 DUANE STREET	3a. Task #	4a. Air Sampler: M. SERIKI	

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☒ TEM (0.45 micron MCE)	9. Type:
12-29-01	2ND FLOOR MECHANIC ROOM	Cassette/Filter Manufacture _____ Lot # _____	Cassette/Filter Manufacture MULTI METRIX CS 2545PB Lot # 00263916	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock) 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.) 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
03				Field Blank OPEN FOR 30 SECS.									
04				Field Blank OPEN FOR 30 SECS.									
01				SOUTH EAST OF AC CONDENSOR UNIT 2ND FLOOR MECH. RM AIR HANDLER	0830	1040	130	10	10	10	1300		
02				SOUTH WEST OF AC CONDENSOR UNIT AIR HANDLER 2ND FLOOR MECH RM	0833	1043	130	10	10	10	1300		

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I			
II	RRW	12/30	5:00
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name: ATC - TEM	23. Date:	24. Time:
a. Analyzed By: RRW	12/31	15:00
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: FRED. BURKHARDT

27. Result To: BRENDAN FARRELL
Beeper/Phone #'s 212-346-7742

28. Comments:

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/01)

NYC 9/11 Public Portal Document

NYC-WTC_000104540

NYC 9/11 Public Portal Document

Fiberglass in Air

PCB's in Air

Metals in Air

Dioxins in Air

NYC-WTC_000104541

NYC-WTC_000104542

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page ____ of ____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other ____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Monitor:	4c. Rotameter Number:
Tribeca	2a. Project Address: 105 Duane St NY NY	3a. Task #	4a. Air Sampler:	SD-132

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
11-1-01		Cassette/Filter Manufacture: MMI Lot #: 01057915	Cassette/Filter Manufacture: X Lot #	a. ☐ Background b. ☐ Pre-Abate c. ☐ Abatement d. ☐ Post-Abate e. ☐ OSHA f. ☐ Environmental g. ☐ Ambient ☒ Other Fiber 9/1955

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location: 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock): 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.): 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
7				Field Blank Field Blank								0/100	
1				Hallway SOPC	1640	1940	180	10	10	10	1800	6/100	<.003
2				Hallway 40PC	1645	1945	180	10	10	10	1800	5/100	<.003
3				Hallway 30PC	1650	1950	180	10	10	10	1800	5/100	<.003
4				Hallway 20PC	1655	1955	180	10	10	10	1800	4/100	<.003
5				Hallway 10PC	1700	2000	180	10	10	10	1800	6/100	<.003
6				Lobby	1705	2005	180	10	10	10	1800	4/100	<.003

CHAIN OF CUSTODY

	18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I	[illegible]	[illegible]	11/07/01	2150
II				
III				

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name:	23. Date:	24. Time:
a. Analyzed By: [illegible]	11/8/01	0100
b. QC By:		
c. Lab Batch #: 97834		

25. Microscope Make/Serial #:
☒ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

26. ATC Project Manager: Fred Burkhardt

27. Result To: Fred Burkhardt
Beeper/Phone #'s ____

28. Comments:

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/01)

NYC-WTC_000104543

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

Page _____ of _____

TURNAROUND TIME

☐ 2 hrs ☐ 6 hrs ☐ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other _____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Manager:
Tribeca Towers	2a. Project Address: 105 Duane st	3a. Task #	4a. Air Sampler:

4c. Rotameter Number: SD-152

5. Date:	6. Abatement Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:
11/21/01	Hallway	Cassette/Filter Manufacture: MMT; Lot #: 010519	Cassette/Filter Manufacture: ; Lot #:	a. ☐ Background; b. ☐ Pre-Abate; c. ☐ Abatement; d. ☐ Post-Abate; e. ☐ OSHA; f. ☐ Environmental; g. ☒ Ambient; h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location: 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock): 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.): 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
				Field Blank									
				Field Blank									
H-1				APT # 10D Right side	1710	1910	120	1.5	1.5	1.5	1800	2/100	<0.003
H-2				APT # 20D right side	1715	1915	120	1.5	1.5	1.5	1800	2/100	<0.003
H-3				APT # 30D Right side	1720	1920	120	1.5	1.5	1.5	1800	5/100	<0.003
H-4				APT # 40D Right side	1725	1925	120	1.5	1.5	1.5	1800	1/100	<0.003
H-5				APT # 50D Right side	1730	1930	120	1.5	1.5	1.5	1800	3/100	<0.003
H-6				~~APT~~ Lobby.	1740	1940	120	1.5	1.5	1.5	1800	4/100	<0.003

CHAIN OF CUSTODY

18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I	R Dondina	11.21.01	23.00
II			
III			

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name:	23. Date:	24. Time:
a. Analyzed By: R Dondina	11.21.01	23 30
b. QC By:		
c. Lab Batch #: 98057		

25. Microscope Make/Serial #: Olympus sc-25
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

26. ATC Project Manager: Fred Berkhardt

27. Result To: Fred Berkhardt
Beeper/Phone #'s _____

28. Comments:

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/01)

NYC-WTC_000104544

NYC 9/11 Public Portal Document

ATC ASSOCIATES INC.

AIR SOUNDING TRACKS

AIR MONITORING DATA AND CHAIN OF CUSTODY FORM

0112-039
12-6-01

Page ____ of ____

TURNAROUND TIME
☐ 2 hrs ☐ 6 hrs ☒ 48 hrs ☐ Standard
☐ 4 hrs ☐ 24 hrs ☐ 72 hrs ☐ Other ____

PROJECT INFORMATION

1. Client:	2. Project Name	3. Project #	4. Project Manager:	4c. Rotameter Number:
Tribeca Towers	REVISED	04672-14	Kurt Bouslik	SD-132
	2a. Project Address: 105 Duane st	3a. Task #	4a. Air Sampler:	

5. Date:	6. ~~Abatement~~ Location:	7. ☐ PCM (0.8 micron MCE)	8. ☐ TEM (0.45 micron MCE)	9. Type:		
11/21-01	VARIOUS	Cassette/Filter Manufacturer: ____ Lot # ____	Cassette/Filter Manufacturer: ____ Lot # ____	a. ☐ Background	c. ☐ Abatement	f. ☐ Environmental
				b. ☐ Pre-Abate	d. ☐ Post-Abate	g. ☒ Ambient
					e. ☐ OSHA	h. ☐ Other

DAILY AIR SAMPLE RECORD

10. Sample I.D. Number	11. Pump Number	12. Sample Location: 12a. IWA	12b. OWA	12c. Sample Coordinates	13. Time (24 hrs clock): 13a. Start	13b. End	13c. Total	14. Flow Rate (L/min.): 14a. Start	14b. End	14b. Avg	15. Total Air Vol. (liters)	16. # Fibers/Fields Minus Blank	17. Fiber Conc. F/CC
1 B-1				Field Blank									
2 B-2				Field Blank									
3 1				APT # 45B	1300	2080	480	2.0	2.0	2.0	900		
4 2				APT # 43B	1305	2105	480	2.0	1.9	1.95	936		
5 3				APT # 29B	1310	2110	480	2.0	2.0	2.0	960		
6 4				APT # 25C	1315	2115	480	2.0	1.8	1.9	912		
7 5				APT # 18J	1320	2050	450	2.0	2.0	2.0	900		
8 6				APT # 14B	1325	2125	480	2.0	1.9	1.95	936		
9 7				APT # 14F	1330	2100	450	2.0	2.0	2.0	900		
10 8				APT # 12E	1335	2135	480	2.0	2.0	2.0	960		

CHAIN OF CUSTODY

	18. Relinquished By:	19. Received By:	20. Date:	21. Time:
I	[signature]	[signature]	12/3/01	1135
II		[signature]	12/4/01	0930
III				

LAB INFORMATION (ATC ELAP # 10879, ATC NVLAP # 1187)

22. Lab Name:	23. Date:	24. Time:
a. Analyzed By:		
b. QC By:		
c. Lab Batch #:		

25. Microscope Make/Serial #:
☐ Nikon Labophot 238913
☐ Nikon Labophot 238917
☐ Nikon Labophot 239079

Analysis Methodology
PCM - NIOSH 7400A
TEM - AHERA

26. ATC Project Manager: Fred Burkhardt

27. Result To: Fred Burkhardt
Beeper/Phone #'s ____

28. Comments: LEAD/COPPER/CHROMIUM IN AIR

WHITE - File YELLOW - Client/Report PINK - Lab GOLDENROD - Field

NY-1 (1/01)

** TOTAL PAGE.06 **

NYC 9/11 Public Portal Document

SCILAB
FULL SERVICE ENVIRONMENTAL LABORATORIES

Eight School Street
Weymouth, MA 02189
781-337-9334

Laboratory Report

Customer: ATC Associates
104 East 25th Street
New York, NY 10010

Report Date 12/6/01
Workorder No. 0112-00039

Attention: FRED BURKHARDT
Subject: TRIBECO TOWERS

Sample: 001 **B-1 FIELD BLANK**
Date: 11/21/01
Matrix: AIR

Parameter	Method	Results	Units	PQL	Analyst	Analysis Date	Qual
Lead, Air	ICP, NIOSH 7300	ND	ug/m3	2.22	TDJ	12/06/01	
Copper,Air	200.7	ND	ug/m3	0.111	TDJ	12/06/01	
Chromium, Air	ICP, NIOSH 7300	ND	ug/m3	0.222	TDJ	12/06/01	

Sample: 002 **B-2 FIELD BLANK**
Date: 11/21/01
Matrix: AIR

Parameter	Method	Results	Units	PQL	Analyst	Analysis Date	Qual
Lead, Air	ICP, NIOSH 7300	ND	ug/m3	2.22	TDJ	12/06/01	
Copper,Air	200.7	ND	ug/m3	0.111	TDJ	12/06/01	
Chromium, Air	ICP, NIOSH 7300	ND	ug/m3	0.222	TDJ	12/06/01	

Sample: 003 **1 APT #45B (900 L.)**
Date: 11/21/01
Matrix: AIR

Parameter	Method	Results	Units	PQL	Analyst	Analysis Date	Qual
Lead, Air	ICP, NIOSH 7300	ND	ug/m3	2.22	TDJ	12/06/01	
Copper,Air	200.7	0.911	ug/m3	0.111	TDJ	12/06/01	
Chromium, Air	ICP, NIOSH 7300	ND	ug/m3	0.222	TDJ	12/06/01	

Sample: 004 **2 APT #43B (936 L.)**
Date: 11/21/01
Matrix: AIR

Certifications: MA: MA069 NY:10982 CT: PH0119 RI:A45 CA:2050 ME:MA069 NJ: 59744

NYC-WTC_000104545

SCILAB
FULL SERVICE ENVIRONMENTAL LABORATORIES

Customer: ATC Associates

Workorder No. 0112-00039

Sample: 004 **2 APT #43B (936 L.)**
(Continued)

Parameter	Method	Results	Units	PQL	Analyst	Analysis Date	Qual
Lead, Air	ICP, NIOSH 7300	ND	ug/m3	2.14	TDJ	12/06/01	
Copper,Air	200.7	0.404	ug/m3	0.107	TDJ	12/06/01	
Chromium, Air	ICP, NIOSH 7300	ND	ug/m3	0.214	TDJ	12/06/01	

Sample: 005 **3 APT #29E (960 L.)**
Date: 11/21/01
Matrix: AIR

Parameter	Method	Results	Units	PQL	Analyst	Analysis Date	Qual
Lead, Air	ICP, NIOSH 7300	ND	ug/m3	2.08	TDJ	12/06/01	
Copper,Air	200.7	0.410	ug/m3	0.104	TDJ	12/06/01	
Chromium, Air	ICP, NIOSH 7300	ND	ug/m3	0.208	TDJ	12/06/01	

Sample: 006 **4 APR #25G (912 L.)**
Date: 11/21/01
Matrix: AIR

Parameter	Method	Results	Units	PQL	Analyst	Analysis Date	Qual
Lead, Air	ICP, NIOSH 7300	ND	ug/m3	2.19	TDJ	12/06/01	
Copper,Air	200.7	0.377	ug/m3	0.110	TDJ	12/06/01	
Chromium, Air	ICP, NIOSH 7300	ND	ug/m3	0.219	TDJ	12/06/01	

Sample: 007 **5 APT #18J (900 L.)**
Date: 11/21/01
Matrix: AIR

Parameter	Method	Results	Units	PQL	Analyst	Analysis Date	Qual
Lead, Air	ICP, NIOSH 7300	ND	ug/m3	2.22	TDJ	12/06/01	
Copper,Air	200.7	ND	ug/m3	0.111	TDJ	12/06/01	
Chromium, Air	ICP, NIOSH 7300	ND	ug/m3	0.222	TDJ	12/06/01	

Sample: 008 **6 APT #14b (936 L.)**

Certifications: MA: MA069 NY:10982 CT: PH0119 RI:A45 CA:2050 ME:MA069 NJ: 59744

SCILAB
FULL SERVICE ENVIRONMENTAL LABORATORIES

Customer: ATC Associates

Workorder No. 0112-00039

Sample: **008** **6 APT #14b (936 L.)**
(Continued)

Date: **11/21/01**
Matrix: **AIR**

Parameter	Method	Results	Units	PQL	Analyst	Analysis Date	Qual
Lead, Air	ICP, NIOSH 7300	ND	ug/m3	2.14	TDJ	12/06/01	
Copper,Air	200.7	0.288	ug/m3	0.107	TDJ	12/06/01	
Chromium, Air	ICP, NIOSH 7300	ND	ug/m3	0.214	TDJ	12/06/01	

Sample: **009** **7 APT #14F (900 L.)**
Date: **11/21/01**
Matrix: **AIR**

Parameter	Method	Results	Units	PQL	Analyst	Analysis Date	Qual
Lead, Air	ICP, NIOSH 7300	ND	ug/m3	2.22	TDJ	12/06/01	
Copper,Air	200.7	0.269	ug/m3	0.111	TDJ	12/06/01	
Chromium, Air	ICP, NIOSH 7300	ND	ug/m3	0.222	TDJ	12/06/01	

Sample: **010** **8 APT #12E (960 L.)**
Date: **11/21/01**
Matrix: **AIR**

Parameter	Method	Results	Units	PQL	Analyst	Analysis Date	Qual
Lead, Air	ICP, NIOSH 7300	ND	ug/m3	2.08	TDJ	12/06/01	
Copper,Air	200.7	0.794	ug/m3	0.104	TDJ	12/06/01	
Chromium, Air	ICP, NIOSH 7300	ND	ug/m3	0.208	TDJ	12/06/01	

Certifications: MA: MA069 NY:10982 CT: PH0119 RI:A45 CA:2050 ME:MA069 NJ: 59744

ANALYTICAL SERVICES

Chain of Custody Record

4418 Pottsville Pike Reading, PA 19605
phone: (610) 921-8833 fax: (610) 921-9667

Sample Container Information												
Bottle Type (G P H)												
# of Containers												
Preserved? (Y/N)												

Report Results To:
PO # 09622-14-1 Job ID 105 DUANE ST
Name ATC ASSOCIATES INC.
Company F. BURKHARDT
Mailing Address 104 EAST 25 ST.
City NEW YORK State NY ZIP 10010
Telephone # 212/353-8200 Fax # 212-353-8306

Send Invoice To: ABOVE
Name Telephone #
Company Dept.
Mailing Address
City State ZIP
Credit Card # Exp. Date

Analysis Requested

R01110118

Page 1 of 1

PAS Quote#

Sampled by:

	SAMPLE DESCRIPTION	Air Vol. (L or min)	Matrix Type	Date Sampled	Time Sampled	PCB IN AIR	PCB IN AIR	METALS IN AIR CHROMIUM, COPPER	Comments/Hazards/ Location Details
1	PCB-1 LOBBY	22.4 cc/m	AIR	10/30/01	518M				RUSH
2	PCB-2 LOBBY	22.4 cc/m							
3	METAL-01 LOBBY	2 l/m			515				
4	METAL-02 BLANK	—							
5	PCB-3 BLANK	—							
6									
7									
8									
9									
10									

Special Instructions (including Data Deliverables and Turn Around Time):

		Date	Time
Samples relinquished to shipper or courier by:	[signature]	10/30/01	1700
Samples received by:			

Samples Relinquished by:	Samples Relinquished to:	Date	Time
Samples Relinquished by:	Samples Relinquished to Laboratory: [signature]	11/2/01	1230

Method of Shipment/Delivery: UPS FED-EX PAS Courier Client drop off Other

Samples Rec'd. on Ice? (Y N n/a) Temp. Blank ____ Sample Temp. ____
Samples rec'd intact? (Y N) Custody seals intact? (Y N n/a) ID on samples match COC? (Y N)
VOC Samples have zero headspace? (Y N n/a) Samples properly preserved? (Y N n/a)

Notes :

Analytical Results
for
ATC Associates

WorkOrder: R01110118
Client Reference: 105 Duane St

Analyte	Concentration (ug)	Concentration (mg/m³)	Concentration (ppm)	Limit of Detection (ug)		Test Method	Date Analyzed /Analyst	
Client ID: PCB-1&2, Lobby	**Lab ID:** -01A	**Date Sampled:** 10/30/01			**Matrix:** Tenax		**Air Vol.(L):** 11.60	
Aroclor 1016	<0.5	<0.043	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1221	<0.5	<0.043	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1232	<0.5	<0.043	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1242	<0.5	<0.043	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1248	<0.5	<0.043	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1254	<0.5	<0.043	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1260	<0.5	<0.043	--	0.5		POLYCHLORINA	11/12/2001	GIF
Client ID: PCB-3, Blank	**Lab ID:** -02A	**Date Sampled:** 10/30/01			**Matrix:** Tenax		**Air Vol.(L):** NA	
Aroclor 1016	<0.5	--	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1221	<0.5	--	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1232	<0.5	--	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1242	<0.5	--	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1248	<0.5	--	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1254	<0.5	--	--	0.5		POLYCHLORINA	11/12/2001	GIF
Aroclor 1260	<0.5	--	--	0.5		POLYCHLORINA	11/12/2001	GIF
Client ID: Metal-01, Lobby	**Lab ID:** -03A	**Date Sampled:** 10/30/01			**Matrix:** Filter		**Air Vol.(L):** 1030	
Chromium	<0.2	<0.000194	--	0.2		NIOSH Metals	11/28/2001	AJB
Copper	<0.2	<0.000194	--	0.2		NIOSH Metals	11/28/2001	AJB
Client ID: Metal-02, Blank	**Lab ID:** -04A	**Date Sampled:** 10/30/01			**Matrix:** Filter		**Air Vol.(L):** NA	
Chromium	<0.2	--	--	0.2		NIOSH Metals	11/28/2001	AJB
Copper	<0.2	--	--	0.2		NIOSH Metals	11/28/2001	AJB

(a) Analysis indicates possible breakthrough; back section result is greater than % of the front section result.

General Notes:
<: Less than the indicated limit of detection (LOD).
--: Information not available or not applicable.
Back sections were checked and showed no significant breakthrough.

NYC-WTC_000104550

NYC 9/11 Public Portal Document

[redacted] ATC ASSOCIATES INC. [redacted] PAGE ___ OF ___

~~OSH~~A AIR SAMPLING - CHAIN OF CUSTODY

104 EAST 25TH STREET, 10TH FLOOR
NEW YORK, NEW YORK 10010
PHONE: 212-353-8280 FAX: 212-979-8447

9585

Client:	Project Address:	Field Technician:	Sample Analysis Required:		Date:
RCWCO	105 DUANE ST	F. BURGMAN	☒ LEAD	☐ OTHER:	10/30/01
Project No:		Project Manager:			Turnaround Time:
09622-15	NY/NY		Cassette Lot #:	Rotameter #:	STAT

Sample ID Number	Sample Locations	Time Start	Time End	Total Minutes	Flow Rate (L/Min) Start	End	Avg.	Total Air Volume (Liters)
	Field Blanks (Open)							
	Field Blanks (Closed)							
PH-01	ATC Pump #: 1970	1204	2041	517	2	2	2	1034
	~~NAME~~:							
	~~TASK~~: LOBBY AREA SAMPLE							
	SOCIAL SECURITY #:							
	RESPIRATOR USED:							
	ATC Pump #:							
	NAME:							
	TASK:							
	SOCIAL SECURITY #:							
	RESPIRATOR USED:							
	ATC Pump #:							
	NAME:							
	TASK:							
	SOCIAL SECURITY #:							
	RESPIRATOR USED:							

(ADDITIONAL COMMENTS ON BACK)

RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	DATE/TIME:	LABORATORY:	
[signature]	10/31/01	[signature]	11/6/1		
PRINT NAME:		PRINT NAME:		NLLAP#	ELAP#
		Ima Um	11a		

w lead clients forms New air.xls

Pace Analytical™
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel: 612-607-1700
Fax: 612-607-6444

Method 23 Analysis Results

Client - ATC

Client's Sample ID	P-3 DUANE ST		
Lab Sample ID	103286969		
Filename	F20212B_07	Matrix	PUF
Injected By	BAL	Dilution	NA
Amount Extracted	491.07 m3	Collected	01/23/2002
ICAL Date	01/25/2002	Received	01/25/2002
CCal Filename(s)	F20212B_02	Extracted	01/29/2002
Method Blank ID	BLANK-1441	Analyzed	02/13/2002 01:23

Native Isomers	Conc pg/m3	EMPC pg/m3	LRL pg/m3		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	0.0270	0.0064	IA	2,3,7,8-TCDF-13C	2.00	69
Total TCDF	0.770	-----	0.0041		2,3,7,8-TCDD-13C	2.00	72
					1,2,3,7,8-PeCDF-13C	2.00	77
2,3,7,8-TCDD	-----	0.0055	0.0045	IA	1,2,3,7,8-PeCDD-13C	2.00	83
Total TCDD	2.000	-----	0.0041		1,2,3,6,7,8-HxCDF-13C	2.00	67
					1,2,3,6,7,8-HxCDD-13C	2.00	67
1,2,3,7,8-PeCDF	-----	0.0310	0.0200	E	1,2,3,4,6,7,8-HpCDF-13C	2.00	62
2,3,4,7,8-PeCDF	ND	-----	0.0200		1,2,3,4,6,7,8-HpCDD-13C	2.00	68
Total PeCDF	0.320	-----	0.0200		OCDD-13C	4.00	60
1,2,3,7,8-PeCDD	ND	-----	0.0200		Recovery		
Total PeCDD	0.370	-----	0.0200		Standards		
					1,2,3,4-TCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDF	-----	0.0330	0.0200	E	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,6,7,8-HxCDF	-----	0.0220	0.0200	E			
2,3,4,6,7,8-HxCDF	0.026	-----	0.0200	J	Surrogates		
1,2,3,7,8,9-HxCDF	ND	-----	0.0200		2,3,7,8-TCDD-37Cl4	2.00	103
Total HxCDF	0.150	-----	0.0200		2,3,4,7,8-PeCDF-13C	2.00	103
					1,2,3,4,7,8-HxCDF-13C	2.00	118
1,2,3,4,7,8-HxCDD	ND	-----	0.0200		1,2,3,4,7,8-HxCDD-13C	2.00	127
1,2,3,6,7,8-HxCDD	ND	-----	0.0200		1,2,3,4,7,8,9-HpCDF-13C	2.00	100
1,2,3,7,8,9-HxCDD	ND	-----	0.0200				
Total HxCDD	0.350	-----	0.0200				
1,2,3,4,6,7,8-HpCDF	0.048	-----	0.0200	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.0200		Equivalence: 0.0048 pg/m3		
Total HpCDF	0.048	-----	0.0200	J	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	0.110	-----	0.0200				
Total HpCDD	0.200	-----	0.0200				
OCDF	0.056	-----	0.0410	J			
OCDD	0.590	-----	0.0410				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
LRL = Lower Reporting Limit
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis
A = Detection Limit based on signal to noise

I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Report No.....02-1053453

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.