

ATTACHMENT A

BACKGROUND SAMPLING

(NYCHA)

- **ASBESTOS AIR SAMPLING-TEM (9-16-01)**
- **ASBESTOS BULK WIPE SAMPLING-TEM (9-16-01)**
- **LEAD IN DUST WIPE SAMPLES (9-16-01)**

09/18/2001 09:27 2123533599

ATC ASSOCIATES INC.

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

APPROVED NY STATE DOH E-2-F
ACCREDITED NVLAP Lab Code: 4

Summary of TEM Results

N.Y.C. Housing Authority
250 Broadway, 16th Floor
New York, NY 10007
Mr. Brian Clarke

DATE: 09/16/01

Project/Site Identification: 250 Broadway, NY, NY
Floors 31, 27, 19, 8

CONCLUSION:STATISTICAL SUMMARY1) Inside Samples

TEM#	Project #	Volume(l)	Asbestos Concentration		PCB/T
			S/mm ²	S/cc	
Average=			N/A	N/A	N/A

2) Outside Samples

TEM#	Project #	Volume(l)	Asbestos Concentration		PCB/T
			S/mm ²	S/cc	
5512- 59076	02	1800	0.0	0.0048 *	
5512- 59077	03	1800	22.2	0.0048	
5512- 59078	04	1800	0.0	0.0048 *	
5512- 59079	05	1800	0.0	0.0048 *	
5512- 59080	06	1800	0.0	0.0048 *	
5512- 59081	07	1800	0.0	0.0048 *	
5512- 59082	08	1800	22.2	0.0048	
5512- 59083	09	1800	0.0	0.0048 *	
5512- 59084	10	1800	0.0	0.0048 *	
5512- 59085	11	1800	0.0	0.0048 *	
5512- 59086	12	1800	0.0	0.0048 *	
5512- 59087	13	1800	0.0	0.0048 *	
Average=			3.7	0.0048	23

3) Blanks

TEM#	Project #	Asbestos Concentration		PCB
		S/mm ²	S/cc	
5512- 59074	00	Not Analyzed		
5512- 59075	01	Not Analyzed		
Average=		N/A	N/A	1

4) Value of T - Statistic : N/A

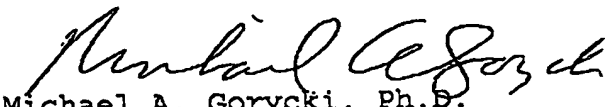
* None detected; concentration equivalent to analytical sensitivity assigned.

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.

RP
Analyzed by:
Roman Peysakhov


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

09/18/2001 09:27 2123533599

ATC ASSOCIATES INC

PAGE 01/03



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

September 16, 2001

N.Y.C. Housing Authority
250 Broadway
New York, NY 10007
Attn: Mr. Brian Clarke

Re: Report of TEM Analysis

Dear Mr. Clarke:

Following are the results of transmission electron microscopy (TEM) analysis of air samples from our Group No. 5512:

Project Name: 250 Broadway, NY, NY
Location: Floors 31, 27, 19, 8
Samples received: 09/16/01

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 mm³ was detected in all of the twelve samples submitted from the site. Please note that the maximum flow rate of 10 liters per minute was exceeded.

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,

A handwritten signature in dark ink, appearing to read 'Michael A. Gorycki', is written over the typed name.

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

09/18/2001 09:27 2123533599

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PAGE 02/

BRIAN CLARKIS

MONITORING DATA SHEET

Page 1 Of

5512

SITE 250 BROADWAY BORO: ☒ Man ☐ Bx ☐ Bk ☐ Qn ☐ SI ☐ LI DATE: 9ACTIVITIES: ☒ Pre ☐ During ☐ Final

59074-59087

CLIENT: NYC HATECHNICIAN: MARVIN MOORE HEAD

ROTOMETER #: _____

WORK AREA: _____

SIGNATURE: Marvin Moore Head

SAMPLE #	LOCATIONS	PUMP #	START TIME	END TIME	SAMP TIME (min)	FLOW RATE INIT/FINAL	VOL. LTRS	
00	FIELD BLANK	—						
01	FIELD BLANK	—						
02	3 ^{FL} OUTSIDE LUGER	1	3:45 P	5:45 P _m	120	15 15	1800 P	<
03	3 ^{FL} Filter Room	2	3:45 P	5:45 P _m	120	15 15	1800 P	=
04	3 ^{FL} COIL ROOM	3	3:45 P	5:45 P _m	120	15 15	1800 P	<
05	27 ^{FL} NEXT TO CHIEF ROOM	4	4:05 P	6:05 P _m	120	15 15	1800	<
06	27 ^{FL} NEXT TO Deputy Director Rm	5	4:05 P	6:05 P _m	120	15 15	1800 P	<
07	27 ^{FL} NEXT TO PANTRY	6	4:05 P	6:05 P _m	120	15 15	1800 P	<
08	19 ^{SOUTH} IN LUGER Rm	7	5:00 P _m	7:00 P _m	120	15 15	1800 P	2
09	19 ^{SOUTH} FILTER Room	8	5:00 P _m	7:00 P _m	120	15 15	1800 P	<
010	19 ^{SOUTH} COIL Rm	9	5:00 P _m	7:00 P _m	120	15 15	1800 P	<
011	8 ^{SOUTH} LUGER Rm	10	5:25 P _m	7:25 P _m	120	15 15	1800 P	<
012	8 ^{SOUTH} FILTER Rm	11	5:25 P _m	7:25 P _m	120	15 15	1800 P	<
013	8 ^{SOUTH} COIL Rm	12	5:25 P _m	7:25 P _m	120	15 15	1800 P	<

ANALYST: R. Pysanov SIGNATURE: R. Pysanov DATE: 9.16.01COMMENTS: Fax Results To Mr Walker ASAP(718) 707-5289

SENT TO	DATE	# OF SAMPLES	RECEIVED BY	DATE

10/01/2001 10:40 FAX 212 353 8306

ATC

007/020

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

N.Y.C. Housing Authority
250 Broadway, 16th Floor
New York, NY 10007

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 09/16/01

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: 250 Broadway, NY, NY
Floors 31, 27, 19, 8

Date Received: 09/16/01

Project Sample No.: 02

Air Volume: 1800 liters

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

Analysis Parameters

TEM Sample No.: 5512 - 59076

Grid Openings Analyzed: 4

Average Grid Opening: 105.00 um

Total Area Analyzed: 0.0450 mm2

Analytical Sensitivity: 22.2 s/mm2
0.0048 s/cc

FIBROUS PARTICULATES ANALYZED

	<u>Number Observed</u>			Matrix Struch.	Total. Struch.	Total Struch. ≥5um	<u>CONCENTRATION</u>		
	Single Fibers	Bundles	Clusters				Filter Struch./mm2	Air Struch./cc	Air ngm/nl
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:

Roman Peysakhov

Report Reviewed by:

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

10/01/2001 10:40 FAX 212 353 8308 ATC

008/020

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

N.Y.C. Housing Authority
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New York, NY 10007

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 09/16/01

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

Analysis Parameters

Project/Site: 250 Broadway, NY, NY
Floors 21, 27, 19, 8
Date Received: 09/16/01

Project Sample No.: 03

Air Volume: 1800 liters

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

TEM Sample No.: 5512 - 59077

Grid Openings Analyzed: 4

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0450 mm2

Analytical Sensitivity: 22.2 #/mm2
0.0048 #/cc

FIBROUS PARTICULATES ANALYZED

	<u>Number Observed</u>						<u>CONCENTRATION</u>		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total Struct.	Total Struct. >5um	Filter Struct./mm2	Air Struct./cc	ngm/m3
Chrysotile Asbestos	0	0	0	1	1	0	22.2	0.0048	157
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	22.2	0.0048	157
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	22.2	0.0048	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:

Roman Peysakhov

Report Reviewed by:

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

10/01/2001 10:41 FAX 212 353 8306

ATC

009/02

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

N.Y.C. Housing Authority
250 Broadway, 16th Floor
New York, NY 10007

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 09/16/01

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

Analysis Parameters

Project/Site: 250 Broadway, NY, NY
Floors 31, 27, 19, 8

Date Received: 09/15/01

Project Sample No.: 04

Air Volume: 1800 liters

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

TEM Sample No.: 5912 - 59378

Grid Openings Analyzed: 4

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0450 mm²

Analytical Sensitivity: 22.2 g/mm²
0.0048 g/cc

FIBROUS PARTICULATES ANALYZED

Number Observed

CONCENTRATION

	Single			Matrix		Total Struct. Σ-ΣΣΣ	Filter		Air
	Fibers	Bundles	Clusters	Struct.	Struct.		Struct./mm ²	Struct./cc	
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:

Report Reviewed by:

Roman Peysakhov

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

10/01/2001 10:41 FAX 212 353 8308 ATC

010/020

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

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250 Broadway, 16th Floor
New York, NY 10007

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 09/16/01

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

Analysis Parameters

Project/Site: 250 Broadway, NY, NY
Floors 31, 27, 19, 8

Date Received: 09/16/01

Project Sample No.: 05

Air Volume: 1800 liters

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

TEM Sample No.: 5512 - 59079

Grid Openings Analyzed: 4

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0450 mm²

Analytical Sensitivity: 22.2 n/mm²
0.0048 n/cc

FIBROUS PARTICULATES ANALYZED

Number Observed

CONCENTRATION

	Single			Matrix	Total	Total	Filter		Air
	Fibers	Bundles	Clusters	Struct.	Struct.	>5um	Struct./mm ²	Struct./cc	ngm/m ³
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:

Report Reviewed by:

Roman Peysakhov

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

10/01/2001 10:41 FAX 212 353 8306

ATC

011/020

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

N.Y.C. Housing Authority
250 Broadway, 16th Floor
New York, NY 10007

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 09/16/01

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

Analysis Parameters

Project/Site: 250 Broadway, NY, NY
Floors 31, 27, 19, 8

Date Received: 09/16/01

Project Sample No.: 06

Air Volume: 1800 liters

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

TEM Sample No.: 5512 - 59080

Grid Openings Analyzed: 4

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0450 mm²

Analytical Sensitivity: 22.2 #/mm²
0.0048 #/cc

FIBROUS PARTICULATES ANALYZED

	<u>Number Observed</u>						<u>CONCENTRATION</u>		
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total Struct.	Total Struct. >=5um	Filter Struct/mm ²	Air Struct/cc	Air ngm/m ³
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:

Roman Peysakhov

Report Reviewed by:

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

10/01/2001 10:41 FAX 212 353 8308

ATC

012/020

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

N.Y.C. Housing Authority
250 Broadway, 16th Floor
New York, NY 10007

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 09/16/01

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

Analysis Parameters

Project/Site: 250 Broadway, NY, NY
Floors 21, 27, 19, 8
Date Received: 09/16/01

Project Sample No.: 07

Air Volume: 1800 liters

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

TEM Sample No.: 5512 - 59081

Grid Openings Analyzed: 4

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0450 mm2

Analytical Sensitivity: 22.2 s/mm2
0.0048 s/cc

FIBROUS PARTICULATES ANALYZED

Number Observed

CONCENTRATION

	Single Fibers	Bundles	Clusters	Matrix Struct.	Total Struct.	Total Struct. ≥5um	Filter Struct./mm2	Air Struct./cc	
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:

Report Reviewed by:

Roman Peysakhov

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

10/01/2001 10:42 FAX 212 353 8306

ATC

013/02c

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

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250 Broadway, 16th Floor
New York, NY 10007

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 09/16/01

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: 250 Broadway, NY, NY
Floors 31, 27, 19, 8
Date Received: 09/16/01

Project Sample No.: 08

Air Volume: 1800 liters

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

Analysis Parameters

TEM Sample No.: 55-2 - 59082

Grid Openings Analyzed: 4

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0450 mm²

Analytical Sensitivity: 22.2 e/mm²
0.0048 e/cc

FIBROUS PARTICULATES ANALYZED

	<u>Number Observed</u>			Matrix Struct.	Total Struct.	Total Struct. ≥5um	<u>CONCENTRATION</u>		
	Single Fibers	Bundles	Clusters				Filter Struct/mm ²	Air Struct/cc	Air ngm/m ³
Chrysotile Asbestos	1	0	0	0	1	0	22.2	0.0048	157
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	22.2	0.0048	157
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	22.2	0.0048	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:

Roman Peysakhov

Report Reviewed by:

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

10/01/2001 10:42 FAX 212 353 8308

ATC

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Method: AHERA Final Rule, EPA Federal Register (40 CFR, Part 763), Vol. 52, No. 210, October 30, 1987

Sample Identification

Project/Site: 250 Broadway, NY, NY
Floors 31, 27, 19, 8

Date Received: 09/16/01

Project Sample No.: 09

Air Volume: 1800 liters

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

Analysis Parameters

TEM Sample No.: 5512 - 59883

Grid Openings Analyzed: 4

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0450 mm²

Analytical Sensitivity: 22.2 n/mm²
0.0048 g/cc

FIBROUS PARTICULATES ANALYZED

	<u>Number Observed</u>			Matrix Struct.	Total Struct.	Total Struct. p-Sum	<u>CONCENTRATION</u>		
	Single Fibers	Bundles	Clusters				Filter Struct./mm ²	Filter Struct./cc	Air ngm/m ³
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:

Roman Peysakhov

Report Reviewed by:

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

10/01/2001 10:42 FAX 212 353 8306

ATC

015/020

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

N.Y.C. Housing Authority
250 Broadway, 16th Floor
New York, NY 10007

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 09/16/01

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

Analysis Parameters

Project/Site: 250 Broadway, NY, NY
Floors 31, 27, 19, 8
Date Received: 09/16/01

TEM Sample No.: 5512 - 59084

Grid Openings Analyzed: 4

Project Sample No.: 10

Average Grid Opening: 106.00 um

Air Volume: 1800 liters

Total Area Analyzed: 0.0450 mm2

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

Analytical Sensitivity: 22.2 s/mm2
0.0048 s/cc

FIBROUS PARTICULATES ANALYZED

Number Observed

CONCENTRATION

	Single			Matrix		Total Struct. ≥ 5um	Filter		Air ngm/m3
	Fibers	Bundles	Clusters	Struct.	Struct.		Struct/mm2	Struct/cc	
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:

Report Reviewed by:

Roman Peysakhov

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

10/01/2001 10:43 FAX 212 353 8308

ATC

016/020

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104 East 25th Street
New York, New York 10010

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Report Date: 09/16/01

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

Analysis Parameters

Project/Site: 250 Broadway, NY, NY
Floors 31, 27, 19, 8
Date Received: 09/16/01

Project Sample No.: 11

Air Volume: 1800 liters

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

TEM Sample No.: 5512 - 59085

Grid Openings Analyzed: 4

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0450 mm²

Analytical Sensitivity: 22.2 B/mm²
0.0048 S/cc

FIBROUS PARTICULATES ANALYZED

	<u>Number Observed</u>						<u>CONCENTRATION</u>		
				Matrix Struct.	Total Struct.	Total Struct. >5um	<u>Filter</u>		<u>Air</u> ngm ³
	<u>Single</u> Fibers	<u>Bundls</u>	<u>Clusters</u>				<u>Struct/mm²</u>	<u>Struct/cc</u>	
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:

Report Reviewed by:

Roman Peysakhov

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

10/01/2001 10:43 FAX 212 353 8308

ATC

017/021

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

N.Y.C. Housing Authority
250 Broadway, 16th Floor
New York, NY 10007

Approved N.Y. State ELAP #10879
ACCREDITED NVLAP Lab Code # 1187
Report Date: 09/16/01

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

Analysis Parameters

Project/Site: 250 Broadway, NY, NY

TEM Sample No.: 5512 - 59086
Floors 31, 27, 19, 8

Data Received: 09/16/01

Grid Openings Analyzed: 4

Project Sample No.: 12

Average Grid Opening: 106.00 um

Air Volume: 1800 liters

Total Area Analyzed: 0.0450 mm2

Filter Type: MCB 25 um diam., Pore Size: 0.45 um

Analytical Sensitivity: 22.2 g/mm2

Effective Area: 385 mm2
0.0048 g/gg

FIBROUS PARTICULATES ANALYZED

	<u>Number Observed</u>						<u>CONCENTRATION</u>		
	<u>Single Fibers</u>	<u>Bundles</u>	<u>Clusters</u>	<u>Matrix Struct.</u>	<u>Total Struct.</u>	<u>Total Struct. Σ=Sum</u>	<u>Filter Struct./mm2</u>	<u>Air Struct./cc</u>	<u>ngm/m3</u>
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:

Report Reviewed by:

Roman Peysakhov

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

10/01/2001 10:43 FAX 212 353 8306

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New York, New York 10010

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Report Date: 09/16/01

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

Analysis Parameters

Project/Site: 250 Broadway, NY, NY
Floors 31, 27, 19, 8

Date Received: 09/16/01

Project Sample No.: 13

Air Volume: 1800 liters

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

TEM Sample No.: 5512 - 59087

Grid Openings Analyzed: 4

Average Grid Opening: 106.00 um

Total Area Analyzed: 0.0450 mm²

Analytical Sensitivity: 22.2 s/mm²
0.0048 s/cc

FIBROUS PARTICULATES ANALYZED

	<u>Number Observed</u>			<u>CONCENTRATION</u>					
	Single Fibers	Bundles	Clusters	Matrix Struct.	Total Struct.	Total Struct. Sum	Filter Struct./mm ²	Filter Struct./cc	Air ngm/m ³
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:

Report Reviewed by:

Roman Peysakhov

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

09/18/2001 09:30 2123533599

ATC ASSOCIATES INC.

PAGE 21



104 East 25th
New York, New York
www.atc-envi
212.353
Fax 212.353

September 16, 2001

N.Y.C. Housing Authority
250 Broadway
New York, NY 10007
Attn: Mr. Brian Clarke

Re: Report of TEM Analysis

Dear Mr. Clarke:

Following are the results of transmission electron microscopy (TEM) qualitative analysis of two bulk samples from our Group No. 5513.

Project Name: 250 Broadway, NY, NY
Location: Floors 24, 11
Samples received: 09/16/01

These results will confirm and document the data transmitted to your office today.

A trace of chrysotile asbestos fibers was detected in both samples.

This laboratory follows analysis procedures described in the New York State Environmental Laboratory Approval Program (ELAP) Certification Manual. These are from Item No. 198.4; TEM Method for Identifying and Quantitating Asbestos in Non-Friable Organically Bound Bulk Samples.

The analyses were supervised by Dr. Michael A. Gorycki, Director of Electron Microscopy. This report may be reproduced only in its entirety and not without prior permission of this laboratory.

We are pleased to note that our TEM lab has received full accreditation from NVLAP and also approval under the NY State DOH ELAP program, as is currently required for recognized analysis of TEM air samples for AHERA projects. 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,

A handwritten signature in dark ink, appearing to read 'Michael A. Gorycki'.

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

Batch No. 5513 Grid Box No. 408 Operator RP
Sample No. 9-16-JK-2 Grid I.D. 222 Date 9.16.01

[illegible]

AMPHIBOL
Amosite
Crocidolite
Anthophyllite
Tremolite
Actinolite

✓ = Positive diffraction pattern observed conforming to identification criteria.
For chrysotile: 7.3Å spacing for 020 reflections (= 60µm objective aperture).
5.3Å spacing for the layer-line repeat (= 1/3 60µm objective aperture). 110 :
130 streaks and presence of 002 and 200 reflections.
For amphiboles: 5.3Å layer-line repeat and approximate 3.5 ratio of non-twinned
layer-line reflection spacing to layer-line repeat distance.

Minimum Requirements: Identify 4 fibers by electron diffraction. Chrysotile: 5.3A layer-line (row) spacing with correct 020, 002, 110, 130 and 200 points or streaks. Amphibole: Correct 5.3A layer-line spacing.

EDX Requirements: Chrysotile: none. Amphibole: identify amphibole species by SI

From PLM NOB ANALYSIS SHEET: $10 \times 11 = 14$
 where 10 = total residue %, 11 = residue asb % TEM and 14 = total % asb &
 Also, $1\% \text{ total asbestos} = 100/\text{total residue \%}$.

09/17/2001 00:36 2123533599

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PAGE 01/03

250 Broadway

5513

16-3K-1) 24th FL SW Corner
16-3K-2) 14th FL NW Corner

SAMPLED by: JAY KRANTZ DATE: 9-16-01
J. Krantz TIME: 5:30 P.M.

Received by: _____ Date: _____
TIME: _____

- TEM ANALYSIS (Qualitative)

CLIENT: NYCHA

Call w/ Results: 718-707-5359
718-707-5364

FAX To: See other
bag

ATC ASSOCIATES, INC
104 E 25th Street, 10th Floor
New York, NY 10010
Tel. 212-353-8280
Fax 212-353-8306

REPORT DATE: 09-18-01

CLIENT: New York City Housing Authority

PROJECT ADDRESS: 250 Broadway
RELEASE #: DR99-1-3821
SAMPLED BY: S. Moldur

SAMPLE DATE: 09-16-01
DATE RECEIVED: 09-16-01
DATE ANALYZED: 09-16-01

SAMPLE MEDIA: Dust Wipe Sample
ANALYSIS REQUIRED: Method EPA 3050/7420

ANALYSIS RESULTS

SAMPLE ID	BATCH NO.	SAMPLE DESCRIPTION AND SURFACE	DIMENSION OF SAMPLE AREA (inches)	LEAD CONCENTRATION ($\mu\text{g}/\text{ft}^2$)	DETECTION LIMIT	P/F
1	14025	Blank	-	<9.0	9.0	✓
2	14025	Lower Rm 31 Floor - Floor	12x12	39.1	9.0	✓
3	14025	Filter Rm 31 Floor - Floor	12x12	66.6	9.0	✓
4	14025	Coil Rm 31 Floor - Floor	12x12	42.9	9.0	✓
5	14025	Outside Lower Rm 31 Floor - Window Sill	4x12	701.2	27.0	✓
6	14025	Chief Office 27 Floor - Desktop	12x12	9.0	9.0	✓
7	14025	Outside Desktop Director 27 Floor - Desktop Office by Secretary	12x12	<9.0	9.0	✓
8	14025	Pantry 27 Floor - Floor	12x12	<9.0	9.0	✓
9	14025	Lower Rm 19 Floor South - Floor	12x12	225.7	9.0	✓
10	14025	Filter Rm 19 Floor South - Floor	12x12	75.2	9.0	✓
11	14025	Coil Rm 19 Floor South - Floor	12x12	377.4	9.0	✓
12	14025	Lower Rm 8 Floor South - Floor	12x12	59.3	9.0	✓
13	14025	Filter Rm 8 Floor South - Floor	12x12	194.0	9.0	✓
14	14025	Coil Rm 8 Floor South	12x12	299.1	9.0	✓

NOTE 1:
THE REPORTING LIMIT (RL) IS 18.0 μg

NOTE 2:
 HUD Guidelines for final clearance dust wipe samples: Floor 40 $\mu\text{g}/\text{ft}^2$, Window sills 250 $\mu\text{g}/\text{ft}^2$, Window wells 400 $\mu\text{g}/\text{ft}^2$, Exterior surfaces 800 $\mu\text{g}/\text{ft}^2$.

10/01/2001 12:09 2125984283

ATC ASSOCIATES

PAGE 02

ATC ASSOCIATES, INC
 104 E 25th Street, 10th Floor
 New York, NY 10010
 Tel 212-353-8280
 Fax 212-353-8306

CERTIFICATION AND SIGNATURES

ANALYSIS PERFORMED BY: PL

REPORT PREPARED BY: [Signature]

ATC certifies that this report is an accurate and authentic report of results obtained from the laboratory analysis.

QUALITY ASSURANCE COORDINATOR: mm

LABORATORY DIRECTOR: mi.

ATC Environmental Inc. (ATC) is accredited by the New York State Department of Health Environmental Laboratory Approval Program (NYS DOH ELAP) to perform analysis of lead in paint and dust wipes (ELAP #10879).

14025

#	Sampling Area	Sample Location	Sample Size
1)	Blank		290 µg/ft ² filter
2)	Lower rm	31 st FL	FL 39.1 (12x12)
3)	Filter rm	31 FL	FL 66.6 (12x12)
4)	Coil rm	31 FL	FL 42.9 (12x12)
5)	Outside Lower rm	31 FL	WIS 701.2 (4x12)
6)	Chief office	27 th FL	Desktop 9.0 (12x12)
7)	Outside Deputy Director office by Secretary	27 th FL	Desktop 49.0 (12x12)
8)	Pantry	29 th FL	FL 49.0 (12x12)
9)	Lower rm	19 th South	FL 225.7 (12x12)
10)	Filter rm	19 th South	FL 75.2 (12x12)
11)	Coil rm	19 th South	FL 377.4 (12x12)
12)	Lower rm	8 th South	FL 59.3 (12x12)
13)	Filter rm	8 th South	FL 194.0 (12x12)
14)	Coil rm	8 th South	FL 299.1 (12x12)

Sampled by: SAM MOLDOR
Jim Holden

DATE: 9/16/01
TIME: P.M.

Received by: *[Signature]*
DATE: 9/16/01
TIME: 11:30 pm.

ANALYSIS: Lead in Dust

INCH.A.

Call With Results: 718-707-5359
718-707-5364

FAX: 718-707-5266
718-707-5251

09/20/2001 22:14 2123533599

ATC ASSOCIATES INC

PAGE 01



Environmental, Geotechnical and Materials Professionals
104 East 25th Street, 10th Floor, New York, NY 10010

TO: Brian Clarke COMPANY: NYCHA
FAX #: 718-707-5266 PHONE #: _____
DATE: 9/20/01 TIME: _____
SENDER: ATC-Lead Lab
ATC FAX #: 212 353-3599 ATC PHONE #: 212 353-8280

PAGES TO FOLLOW _____

CONFIDENTIAL ☐

RUSH ☒

COMMENTS:

Lead Results from 250 Broadway

FAX COVER SHEET