

**ASBESTOS DUST SAMPLING PERFORMED AT
NEW YORK UNIVERSITY DOWNTOWN HOSPITAL (NYUDH)**

On September 13th, 2001, Consulting and Testing Services, (CTSI) at the request of NYUDH, Inc. collected three (3) samples of visible dust from the two main hospital entrances. The purpose of this sampling was to determine if the suspect dust contained asbestos.

The recent tragedy at the World Trade Center released tremendous quantities of dust and detritus to the downtown area, and beyond. Some of the emission is comprised of demolition debris, such as pulverized asbestos fireproofing and floor tiles, and other materials such as ceiling tiles, drywall, wood fiber, paper, fiberglass insulation, heavy metals, concrete and plaster.

The samples collected were from the Gold & William Street entrances (as indicated on the attached certificate of analysis) All sampleing was performed by a certified asbestos investigator, samples were transported to an independent certified laboratory, EMSL Analytical, for analysis. Samples were analyzed utilizing Polarized Light Microscopy (PLM) via NY State ELAP 198.1 method. Sample #001 was selected for confirmatory analysis via Transmission Electron Microscopy (TEM).

Based on laboratory results, all samples were reported as non-ACM (asbestos containing material). Bulk materials are considered to be non-asbestos by the USEPA when less than 1% asbestos in volume.

PII

PII

New York Lab

307 West 38th Street, New York, NY 10018

Phone: 212-290-0051 Fax: 212-290-0058 Email:

EMSL

Attn: CTSI-Consulting & Testing Services, Inc.
622 Georges Rd.
North Brunswick, NJ 08902

Fax: (732) 729-1803 Phone: 732-729-1800

Project: NY DH

Customer ID: CTSI50

Customer PO:

Received: 09/13/01 1:57 PM

EMSL Order: 030104188

EMSL Project ID:

Analysis Date: 9/13/2001

Asbestos Analysis of Bulk Materials by PLM via the NY State ELAP 198.1 Method

Sample	Location	Appearance	Treatment	Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
001 030104188-0001	Ent from Gold Street vestibule	Gray Fibrous Heterogeneous	Teased	35.00% Min. Wool 5.00% Cellulose	13.77% Non-fibrous (other) 31.23% Matrix 15.00% CA Carbonite	<1% Chrysotile
002 030104188-0002	William Street side parapet sample	Tan/Gray Fibrous Heterogeneous	Teased	30.00% Min. Wool 2.91% Cellulose	17.09% Non-fibrous (other) 30.00% Matrix 20.00% CA Carbonite	<1% Chrysotile
003 030104188-0003	William Street side parapet sample	Gray Fibrous Heterogeneous	Teased	25.00% Min. Wool 3.57% Cellulose	16.43% Non-fibrous (other) 30.00% Matrix 25.00% CA Carbonite	<1% Chrysotile

Jim Hall

Analyst



Laboratory Manager
or other approved signatory

PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Negative PLM results cannot be guaranteed. Samples reported as <1% or none detected should be tested with TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NYLAP nor any agency of the United States Government.

analysis performed by EMSL Manhattan (NYLAP #101048-9), NY ELAP 11506

PLM Print Count: 1

EMSL Analytical, Inc.307 West 38th Street, New York, NY 10018
Phone: (212) 290 - 0052 Fax: (212) 290 - 0058**EMSL**

Friday, September 14, 2001

CTSI-Consulting & Testing Services, Inc.
622 Georges Rd.
North Brunswick, NJ 08902
Phone: (732) 729-1800
Fax: (732) 729-1803Project: NY DH
Attention:
Ref Number: 030104188
Page: 1 of 1**TEM Qualitative Analysis**

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLE LOCATION	ASBESTOS DETECTED	ASBESTOS TYPE
001	Ent. From Gold Street Vestibule	See Sample Description	<1.0%	Chrysotile



Analyst


Eric Dzialo
Laboratory Manager

ACCREDITATIONS: NVLAP #101048-9 and NY STATE ELAP #11506

Participates in the AHA Proficiency Analytical Testing (PAT) Program for Asbestos: ID #100463

New York Lab

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Phone: 212-290-0051 Fax: 212-290-0058 Email:

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Attn: CTSI-Consulting & Testing Services, Inc.
622 Georges Rd.
North Brunswick, NJ 08902
Fax: (732) 729-1803 Phone: 732-729-1800
Project: NYU Downtown Hospital

Customer ID: CTS150
Customer PO:
Received: 09/13/01 8:38 PM
EMSL Order: 030104209
EMSL Project ID:
Analysis Date: 9/13/01

Fiber Analysis of Air Samples via NIOSH 7400, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume	Fibers	Fields	LOD (fib/cc)	Fibers/ mm ³	Fibers/ cc	Notes
01 030104209-0001	Ground Floor - Entrance to Corridor	9/13/01	1200.00	62.0	100	0.002	78.98	0.025	
02 030104209-0002	1st Floor - Main Lobby	9/13/01	1170.00	53.0	100	0.002	67.62	0.022	
03 030104209-0003	Field Blank	9/13/01	0.00	<5.5	100		<7.0		Field Blank
04 030104209-0004	Field Blank	9/13/01	0.00	<5.5	100		<7.0		Field Blank

Vicky Andrade

Analyst


Laboratory Manager
or other approved signatory

Limit of detection is 7 fibers/mm³. The laboratory is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. This report relates only to the samples reported above. This report may not be reproduced, except in full, without written approval by EMSL.
Analysis performed by EMSL Manhattan (NY State ELAP #11508)



New York Lab

307 West 38th Street, New York, NY 10018

Phone: 212-290-0051 Fax: 212-290-0058 Email:

EMSL

Attn: Theresa Salami
CTSI-Consulting & Testing Services, Inc.
622 Georges Rd.
North Brunswick, NJ 08902
Fax: (732) 729-1803 Phone: 732-729-1800
Project: NYU Downtown Hospital

Customer ID: CTSI50
Customer PO:
Received: 09/14/01 8:40 AM
EMSL Order: 030104219
EMSL Project ID:
Analysis Date: 9/14/2001

Asbestos Analysis of Air Samples by Transmission Electron Microscopy via NIOSH Method 7402

Sample	Volume (Liters)	Non Asbestos Fibers	PCM F/cc	Asbestos Type(s)	Asbestos Fibers	Asbestos % of total	7402 Adjusted (TEM) F/cc	Notes
01 030104219-0001	1200	24	0.025	Chrysotile	1	4	<0.002	

NIOSH 7402 method only reports fibers $\geq 5\mu\text{m}$ in length and $\geq 0.25\mu\text{m}$ in width. This method requires 2 field blank analyses per set. Since no blanks were analyzed, the results are not blank corrected.

Average number of asbestos fibers on field blanks: n/a

Average number of non-asbestos fibers on field blanks: n/a

Ghayath Elias

Analyst


Laboratory Manager
or other approved signatory

EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc.
Analysis performed by EMSL Manhattan (NY ELAP #11508)

**INDOOR AIR QUALITY ANALYSIS
NYU DOWNTOWN HOSPITAL
9/18/01**

Location	Ug/m ³	CO ₂	CO	RH	Temp.	Dew Point
B39	88.9	455	2.1	43.0	75.6	51.6
2C-General	59.1	540	1.9	45.1	73.3	50.7
2C-OR #3	57.8	439	1.7	51.8	69.1	50.6
2A-Eye Clinic	81.6	433	1.6	48.0	70.9	50.3
2B-Minor Procedures	71.9	578	1.6	49.2	71.0	51.0
6C-OR	58.3	547	1.6	50.2	71.7	52.1
6C-Nursing	59.5	551	1.6	49.9	71.9	52.2
6C-603	63.1	540	1.6	45.3	70.7	50.3
5C-514	75.3	595	1.6	48.0	72.8	52.0
4C-415	78.8	680	1.6	46.3	74.5	52.6
4C-410	74.7	595	1.7	43.5	75.6	51.8
3C-ICU-316	63.5	520	1.7	43.9	75.3	51.8
G-ER-Transition	68.2	443	1.7	50.3	72.7	53.1
G-ER-Trauma	67.1	444	1.6	54.5	70.7	53.5
G-ER-Chest Pain	84.3	590	1.7	56.1	70.6	54.3
G-ER-Main	97.4	751	1.9	54.4	72.3	54.9
Ambient	144.6	364	1.6	39.2	81.8	55.8

ug/m³=micrograms per cubic meter Standard= 15,000 ug/m³
 CO₂=Carbon Dioxide Standard= 1,000 Parts Per Million (PPM)
 CO= Carbon Monoxide Standard= 0-9 PPM
 RH= Relative Humidity Standard= 30-50%
 Temp.= Temperature Standard= 68-84⁰ Fahrenheit

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Regulatory Framework

For your convenience, a list of some of the cited regulatory standards (Such as PEL) follow below.

General – A PEL is the maximum concentration that the Occupational Safety and Health Administration (OSHA) established as acceptable for an eight (8) hour per day, five (5) day per week exposure. This is the standard that the hospital is responsible for compliance with. Hospital staff must not be exposed to concentrations in excess of the PEL.

The US Environmental Protection Agency (USEPA) has standards related to emissions to the environment, and the outdoor (Ambient) air. The entity emitting the contaminants can be held responsible for elevations above these limits, referred to as the National Ambient Air Quality Standards (NAAQS). The hospital is not emitting the involved emissions, and is therefore not responsible for them.

These standards are more relevant to the quality of the fresh air drawn in by the building's HVAC system, and the potential impact upon components of the drawn in contaminants that can subsequently accumulate in the building.

The accumulations can be of particulates, which do not break down over time, such as asbestos or silicates for example.

Non-particulates, such as carbon monoxide, a gas, will not accumulate, as they break down and dissipate in a short time.

Carbon dioxide, produced by the occupant's exhalation, can accumulate if insufficient fresh air is drawn in. Closing of outside air intakes to keep out exterior contaminants can cause interior emissions to build up.

Some parameters, such as microbials, have no regulatory limits. These are typically compared to the outside air for indoor air clearance criteria. The indoor air's concentration should be statistically no higher than the outdoor air's concentration. The current scenario requires some adjustment in interpretation, as the outdoor air can be considered to be somewhat compromised by recent terrorist activities.

Specific contaminants have individual PELs. Some of the parameters measured at the hospital are asbestos, carbon dioxide, and dust.



Asbestos – Airborne asbestos has a PEL of 0.1 fibers per cubic centimeter of air (0.1 f/cc). A separate clearance criteria of 0.01 f/cc is used subsequent to an asbestos abatement project, as a margin of safety. PEL is typically measured as a fiber count, which counts all fibers, not just the asbestos in the total. When total counts are elevated, confirmatory additional analysis can be performed to determine if any of the fibers were actually asbestos, and the true asbestos f/cc can then be determined.

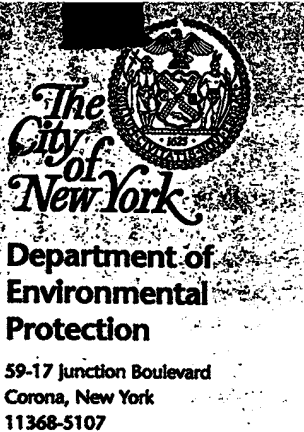
The USEPA considers asbestos levels below 0.005 f/cc to be acceptable for occupancy of schools, and general outdoor air. They also use a clearance level of 70 asbestos structures per square millimeter (70 as/mm²) of air sampling filter if the air sample was at least 1,199 liters in volume.

Bulk materials are considered to be non-asbestos by the USEPA when less than 1% asbestos in volume. As with the above air sampling, further confirmatory analysis can be performed when warranted.

Dust – The PEL for airborne dust is 15 milligrams per cubic meter of air (15 mg/m³).

Carbon dioxide – The PEL for carbon dioxide (CO₂) is 5,000 parts per million (5,000 ppm). The outside air in your area typically has a concentration of 340 to 470 ppm. Indoor air levels above 1,000 ppm are typically considered to be indicative of a need for more fresh air intake.





Joel A. Miele Sr., P.E.
Commissioner

Robert C. Avaltroni
Deputy Commissioner
Bureau of
Environmental Compliance
Tel (718) 595-4418
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*Mike Pelling
Received on Site*

February 15, 2002

Building Owner Name: NYU Downtown Hospital
Address: 170 William St
NY NY
Subject: 170 William St

Dear Sir/ Madam:

In September 2001, the New York City Department and Environmental Protection (NYC DEP) and the Department of Health (NYC DOH) advised building owners regarding building maintenance and re-occupancy issues following the collapse of the World Trade Center. The steps included the professional assessment of building contamination for possible hazardous components, including asbestos, and a retrospective filing, as required, if applicable.

The NYC DEP is hereby requesting copies of the environmental hazard assessments including bulk sample results and air monitoring results and a summary of clean-up activities at the above referenced site. Please forward the requested documents to our offices within FIVE BUSINESS DAYS. They may be faxed to (718) 595-3744 or sent to the NYC DEP Asbestos Control Program at 59-17 Junction Boulevard, 8th floor, Corona, New York 11373-5108.

Please be advised building owners are responsible for the cleaning of building exteriors, grounds, and common areas. Due to changing conditions and continued activity at Ground Zero, building owners should periodically assess the condition of building exteriors and air conditioning systems for cleanliness and may have to periodically re-clean areas. Adherence to proper cleaning methods is important for the protection of public health and the environment. DEP inspectors will be following up on this matter.

If you have any questions, you may reach the Department at (718) 595-3682 during office hours or the 24-hour Help Center at (718) DEP-HELP. DEP staff is available to provide guidance and technical assistance.

Sincerely,

R. Radhakrishnan, P.E.
Director
Asbestos Control Program



www.nyc.gov/dep
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