

TRIBECA PARK 400 CHAMBERS STREET

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

FEBRUARY 15, 2002

PREPARED FOR:
RELATED MANAGEMENT COMPANY, L.P.
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General

ATC Associates Inc. (ATC) was retained by the Related Management Company, L.P. in response to air quality concerns at Tribeca Park following the collapse of the World Trade Center buildings on September 11, 2001. Addressing the concerns ATC conducted interviews with building maintenance personnel performed a visual inspection of the ventilating and air conditioning system air intakes and a walkthrough visual inspection of residential units and common areas. Representative ambient air samples were collected initially for analysis via phase contrast microscopy (PCM) and subsequently via Transmission Electron Microscopy (TEM). Sampling of dust was performed in accordance with the City of New York Department of Environmental Protection's September 14 and 26, 2001 memorandums regarding the cleanup of debris inside buildings for analysis via polarized light microscopy (PLM) for asbestos content. Additionally ATC provided a scope document for and provided general oversight of the cleanup of dust accumulations within various residential units and the cleaning of the house supply air system and building exterior.

Interview with Building Maintenance Personnel and Visual Inspections

Based upon ATC's discussion with the resident manager and our observations, ATC concludes that building management actions and subsequent loss of power successfully shut down the house air conditioning systems minimizing dust intrusion into the HVAC system, and that at the time of our inspection the house supplied HVAC system was free of dust accumulations that can be attributed to the collapse of the World Trade Center Buildings. Assessable residential units were visually inspected for dust and debris accumulations. This inspection subjectively categorized dust accumulations in to three depositional levels. The categories are; No visible dust, Film, and Accumulation. The inspection identified 396 units with no visible dust, 18 units with f Film and 24 units with accumulations of visible dust. Typical film Photo 1, typical accumulation Photo 2



Photo 1 – Typical Film

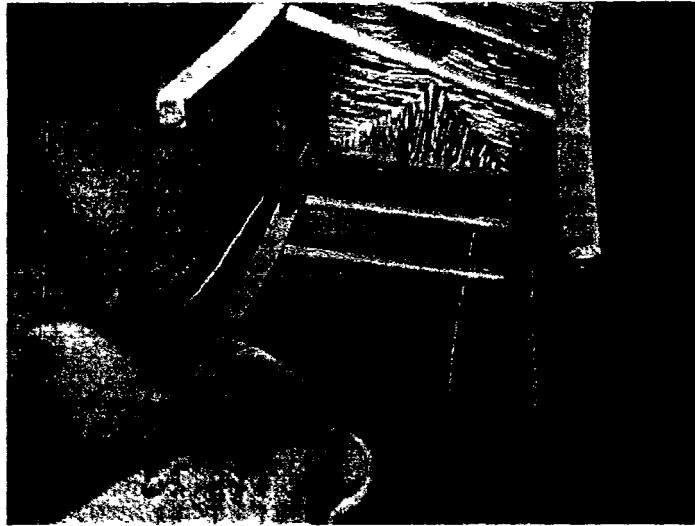


Photo 2 – Typical Acclumation

Common Area & Apartment Cleaning Procedures and PCM Ambient Air Sampling

Common areas, individual apartments identified as having a dust film, dust accumulation, or units specifically requested by the occupant were cleaned between September 18 – 20, 2001 utilizing licensed asbestos abatement contractors (Pinnacle Environmental Corp. and Hazardous Elimination Corp) utilizing the procedures contained in the City of New York Department of Environmental Protection's September 14 and 26, 2001 memorandums regarding the cleanup of debris inside buildings.

The intent of this cleaning is to completely and thoroughly clean all accumulated dust and/or debris from apartment surfaces utilizing wet cleaning methods and/or HEPA filter equipped vacuums allowing families to return to their respective units as quickly as possible.

1. All workers involved in the cleaning shall wear disposable coveralls (tyveck or equal) and at a minimum ½ face negative pressure respirators with HEPA cartridges.
2. Remove each wall mounted inceptor HVAC unit and thoroughly clean. Thoroughly vacuum the entire unit including diffuser, wall sleeve, apartment grate, housing and accessible coils. Remove filter and place in sealed 6 mil unlabeled bag for subsequent cleaning by building personnel. Thoroughly vacuum the interior of the filter housing and surrounding attachment points and replace filter with new filter (building management to supply). Reinstall unit.
3. Thoroughly wet clean and/or vacuum all apartment surfaces including walls, moldings/trim, doors, installed appliances, window components, installed fixtures, and appurtenances.
4. Sequence the work to commence cleaning in the furthest corner working out the area to be cleaned.

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Representative ambient air sampling was performed between September 18 – 20, 2001 during cleaning activities. Attachment 1 contains the Air Monitoring Data and Chain of Custody Forms (28 pages) for the ambient air samples collected by ATC Associates and analyzed by phase contrast microscopy (PCM). Samples were collected from three hallway locations and two apartments on each floor of 400 Chambers Street. Apartments sampled are identified in the following table.

Floor	Apartments	Floor	Apartments
Penthouse	D, R	15	D, R
28	D, R	14	D, R
27	D, R	12	B, L
26	D, R	11	H, R
25	D, R	10	D, T
24	D, R	9	A, M
23	D, R	8	C, U
22	D, R	7	F, T
21	D, R	6	M, Y
20	D, R	5	K, T
19	D, R	4	E, V
18	D, R	3	G, U
17	D, R	1	Gym, Children's Play Room, Pool
16	D, R	Basement	Garage/Hallway

All samples collected recorded fiber levels less than 0.01 f/cc. However, particulate matter raised by maintenance activities obscured the initial analysis of the sample collected from the apartment 9A. This sample was subsequently analyzed using an analogous method and recorded a level less than 0.01 f/cc, consistent with the other four samples collected from the ninth floor and does not present an issue at this time.

In conclusion, based upon the analytical results recording fiber concentrations below the NYC acceptable airborne clearance requirement following an abatement action, it is ATC's opinion that the ambient air samples collected throughout the building meet an acceptable criterion for re-occupancy.

Ambient Air Sampling – Transmission Electron Microscopy

On October 31, November 19 & 28, ATC collected 17 common area and 23 residential units samples as requested by the resident to ascertain the presence or absence of airborne asbestos. Units sampled are listed below by sampling date. All samples were collected and analyzed in accordance with the AHERA Transmission Electron Microscopy (TEM) method as set forth at 40 CFR Part 763, Subpart E, Appendix A which provides resolution down to 0.5µ structure size. Of the total 222 samples collected, a single asbestos structure was detectable on only one sample.

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October 31, 2001

Floor	Apartments	Floor	Apartments	Floor	Apartments
PH		20	Hallway	9	W, Y
28		19	A, D	8	W
27	B	18		7	
26		17	L, N	6	
25	B	16	Q	5	Q, Hallway
24		15	Hallway	4	P*
23		14		3	
22		12		1	Lobby
21		10	P, Hallway	Outside	Various s

+ Two samples

November 16, 2001

Floor	Apartments	Floor	Apartments	Floor	Apartments
PH	D	20		9	P
28		19		8	M, P, Q
27		18		7	
26		17		6	B, Q
25	A	16	K	5	C, B, M
24		15	D, Q	4	Q
23		14	B, N, P	3	S
22	A	12	Q	1	
21	A	10	C	Outside	

+ Two samples

November 28, 2001

Floor	Apartments	Floor	Apartments	Floor	Apartments
PH		20		10	
28		19		9	Hallway
27		18		8	H
26		17		7	A, Hallway
25		16		6	
24		15		5	A, R, Hallway
23		14	R	4	
22		12		3	
21		11	P, Hallway	1	Lobby

In the absence of a specific ambient air standard, ATC has selected as a criteria for acceptable ambient air sample sets, the AHERA re-occupancy requirement following an asbestos abatement action of an average of less than 70 asbestos structures per square millimeter (<70 s/mm²) per sample set. This criteria has been selected because the AHERA requirement is the most stringent reoccupancy requirement available, and has been designed to be protective of children following an asbestos project.

Based upon analytical sample results for all samples recording levels below the AHERA clearance requirement, it is ATC's opinion that the ambient air samples collected throughout the building are representative of the ambient conditions at the time of testing and that the areas tested meet an acceptable criterion for re-occupancy.

Fiberglass in Air via PCM

Twelve ambient air samples collected within the common areas lobby were analyzed for fiberglass using the Phase Contrast Microscopy (PCM) analytical method. All samples collected recorded fiber levels less than 0.01 f/cc

In the absence of a specific ambient air standard for fiberglass, ATC has selected as a criteria for acceptable ambient air sample sets, the NYCDEP re-occupancy requirement following an asbestos abatement action of an average of less than 0.01 fibers per cubic centimeter (0.01 f/cc²).

In conclusion, based upon the analytical results for fiberglass recording fiber concentrations below the NYC acceptable airborne clearance requirement following an abatement action, it is ATC's opinion that the ambient air samples collected throughout the building meet an acceptable criterion for re-occupancy

PCB's in Air

One ambient air sample collected within the lobby and analyzed for PCB's recorded analytical results less than analytical detection limit.

Indoor Air Quality

The IAQ evaluation included collection of seventy-five real-time measurements of temperature, relative humidity, carbon dioxide (CO₂), carbon monoxide (CO), respirable particulates and total volatile organic compounds (TVOC). Currently, there are no regulatory standards for indoor air quality in non-industrial buildings, such as residential units. For the real-time data collected, ATC uses the commonly accepted guidelines cited in the following publications.

- *Ventilation for Acceptable Indoor Air Quality (ASHRAE 62-1999)*, American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE);
- *Thermal Environmental Conditions for Human Occupancy (ASHRAE 55-1992)*;
- *Industrial Hygienists Guide to Indoor Air Quality Investigations (1993)*, American Industrial Hygiene Association (AIHA).

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PARAMETER	TARGET LEVEL	AGENCY ORGANIZATION OR
Carbon Dioxide (CO ₂)	<700 parts per million (ppm) above background level	ASHRAE 62
Carbon Monoxide (CO)	9 ppm	USEPA NPAAQS (as cited in ASHRAE 62)
Respirable Particles (PM ₁₀)	50 micrograms per cubic meter of air (µg/m ³)	USEPA NPAAQS (as cited in ASHRAE 62)
Temperature	Summer: 73-79°F at 50% RH Winter: 68-75°F at 50% RH	ASHRAE 55
Relative Humidity	30 – 60 %	ASHRAE 55
Total Volatile Organic Compounds (TVOC)	1 ppm	AIHA

USEPA = United States Environmental Protection Agency

NPAAQS = National Primary Ambient-Air Quality Standard

AIHA = American Industrial Hygiene Association

All parameters measured during the IAQ assessment were within recommended guideline ranges.

PCB's in Air

One ambient air sample collected within the lobby and analyzed for PCB's recorded analytical results less than analytical detection limit.

Dioxins

One sample twenty-four hour sample was collected using a spiked 75 mm polyurethane foam (PUF) sorbent plug and General Metal Works High Volume PS1 Sampler for polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) [known collectively as dioxins] using a modified version of USEPA Method 23 (see attached analytical reports) All dioxin analyses were performed by Pace Analytical Services (see attached reports).

The EPA's current screening level for dioxin in air, has been set to protect against significantly increased risks of cancer and other adverse health effects. This screening level is based on an assumption of continuous exposure for a year, to an average concentration of 0.16 nanograms per cubic meter (ng/m³) or 160 picograms per cubic meter (0.16 ng/m³ = 160 pg/m³). The sample collected and analyzed recorded a dioxin equivalence concentration of 0.0021 pg/m³, well below the EPA's current screening level.

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Airborne Metals

One common area and nine residential units were sampled for and analyzed for airborne metals. All recorded analytical results were less than analytical detection.

Duct and Exterior Cleaning

TechClean Industries cleaned the air duct of the building. This cleaning included removal and reinstallation after wet cleaning of the grills and registers and High Efficiency Particulate Air (HEPA) vacuuming and washing of the induction fan supplying the systems. The risers were cleaned in phases by sealing diffusers with plastic sheeting and tape, deploying isolation bags to assist in controlling negative pressure, HEPA negative exhaust equipment and various pneumatic agitation devices. The work commenced from the upper most floor and worked towards the mechanical room.

Arcade Contracting cleaned exterior surfaces of the building. This cleaning included High Efficiency Particulate Air (HEPA) vacuuming of exterior ledges and window tracks and pressure washing of exterior surfaces. Following exterior cleaning activities all windows were washed.