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FINAL REPORT
WTC Unoccupied BUILDING MONITORING PROGRAM
Documentation

125 CEDAR STREET
New York, New York

Prepared For:

New York City Department of Environmental Protection
Bureau of Environmental Compliance
59-17 Junction Boulevard
Flushing, New York 11373

Prepared By:

ATC Associates Inc.
104 East 25th Street, 10th Floor
New York, New York 10010
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ATC Project No. 15.22906.0002 Task 02

December 10, 2002

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FINAL DOCUMENTATION

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ATC Associates Inc.

Monitoring Firm:	ATC Associates Inc. 104 East 25th Street, 10th Floor New York, New York 10010 212-353-8280
ATC Environmental Representative:	Benjamin M. Sallemi, Senior Project Manager Paul Pavlidis & Chuck Johnson, Project Monitors Edgar Lemanovich & Tim Amstislavskiy, Air Sampling Technicians
Client:	New York City Department of Environmental Potection Bureau of Environmental Compliance 59-17 Junction Boulevard Flushing, New York 11373
Client Representative:	Ms. Penny Theodorellys
Abatement Contractor:	Action environmental Remediation, Inc
Project Location:	125 Cedar Street NYC, NY
Services Performed by ATC Associates Inc.:	Project management of daily air monitoring; wipe sampling analysis, and final clearance sampling during the cleaning of settled dust, as per the monitoring Specifications prepared by NYCDEP.

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Executive Summary

ATC Associates Inc. (ATC) provided project monitoring, air sampling and management services for the interior dust clean-up activities for the unoccupied building located at 125 Cedar Street, New York, New York. Actual field operations were held from September 12, 2002, with the collection of background wipe samples through November 1, 2002 with the completion of post testing. Background wipe samples for settled dust were analyzed in accordance with the project specifications and the individual analytes were as follows: Lead, Mercury, Poly Aromatic Hydrocarbons, and Dioxin. Clean-up activities within the unoccupied building was conducted in accordance with generally accepted industry practices, as well as the Project specification issued by the New York City Department of Environmental Protection

Action Environmental, a New York State Department of Labor (NYSDOL) licensed asbestos abatement contractor, performed the cleaning services. ATC performed project monitoring, air sampling and management services for the interior dust clean-up activities including; review of contractor worker certification, Contractor oversight, daily collection and analysis of ambient and clearance air sampling.

Prior to the start of cleaning activities, ATC inspected that each area was under negative air flow to ensure compliance with the project Scope of Work Procedures. Negative air flow entailed the installation of negative air units within the apartments, however, because typical cleaning activities included cleaning all surfaces, the apartment units could not be sealed, hence negative pressure wasn't achievable or monitored. As the clean-up project progressed, ATC continuously monitored the Contractor's work practices, generated daily site logs, and collected ambient air samples in areas surrounding the abatement work areas. All ambient air samples collected during this project were less than 70 structures per cubic centimeter as specified, well below acceptable levels established by federal regulations (AHERA).

Once the Contractor completed cleaning activities from within all areas, in accordance with project Scope of Work Procedures, ATC, NYCDEP and EPA visually inspected each work area to ensure the areas were decontaminated to a level of no visible debris. Following this successful final visual inspection, ATC performed final air and wipe clearance sampling in accordance with project Scope of Work Procedures. Air clearance sampling entailed collection of fiberglass air samples, analyzed via NIOSH method 7400 "B" counting rules, crystalline silica, analyzed via NIOSH 7500, as well as an EPA modified Transmission Electron Microscopy (TEM) AHERA standard referred to as PCMe. All TEM air samples were analyzed by ATC's New York City laboratory, with all sample results satisfying the accepted final air clearance criteria of less than or equal to 0.0009 f/cc PCMe.

Clearance wipe sampling was performed consistent with generally accepted industrial hygiene practices. There were inherent limitations created by operational and work practice

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variability, variations in contaminant concentrations, and sampling and analytical accuracy. The acceptable results of the sampling represent conditions found on the dates the samples were collected. Individual analytes specified earlier were again analyzed in accordance with the project specifications utilizing the following analytical procedures:

- Lead, EPA Method SW-846-6010B
- PAHs, ASTM-6661-01, EPA Method SW-846-8270C
- Dioxin, ASTM-6661-01, EPA Method SW-846-8290
- Mercury, EPA Method SW-846-7471A

Scope of Work

All work performed was conducted in compliance with general industry practices, applicable relevant and appropriate regulations, including, but not limited to the USEPA, USDOL, NYSDOL, NYSDEC, NYCDEP, NYCDOS, and NYCDOH. The scope of work entailed a thorough cleaning of visible dust accumulations from all surfaces within each apartment unit, except as noted within the Project specifications. Cleaning entailed the use of water to mist material prior to cleaning without generating water accumulations. All waste was subsequently double bagged and appropriately labeled prior to disposal. On occasion, equipment that proved to be difficult to clean via wet wiping techniques (i.e.: electrical equipment, fin tube radiators, appliances, etc.) was cleaned by using low pressure compressed air to dislodge settled dust prior to cleaning.

Project Description

Work Sequence

The following lists the sequence for cleaning of accumulated dust:

- Mobilized equipment and personnel to job site (ATC and Action).
- Collected and analyzed background wipe samples (ATC).
- Posted warning signs to establish regulated work areas (Action).
- Constructed engineering controls per Contract Documents and current regulations (Action).
- Performed pre-abatement inspection of Contractor engineering controls (ATC).
- Collected ambient air samples to monitor airborne fiber levels (ATC).
- Performed required clean-up of settled dust (Action).
- Performed oversight of Contractor work practices (ATC)
- Performed proper removal and disposal of geenerated waste from the work areas (Action).
- Performed visual inspections to ensure no visible debris remaining in work areas (ATC).

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- Collected and analyzed final air clearance samples (ATC).
- Collected and analyzed final wipe clearance samples (ATC).
- Disassembled and cleaned work area (Action).

Engineering Controls

Acction employed the following engineering controls during the removal of all ACM from the work areas:

- Isolated each work area per Contract Documents, and to the satisfaction of the on-site Project Monitor.
- Constructed a three-stage decontamination unit with shower.
- Installed HEPA-filtered negative pressure exhaust fans.
- Engineering controls were inspected by ATC for compliance with all applicable local, state, and federal rules and regulations.

Work Procedures

Measures to minimize the release of fibers during cleaning included:

- Wetting of settled dust with water prior to disturbing.
- Promptly placing removed settled dust in plastic bags for proper disposal.

Worker Protection

Workers who entered the work area during cleaning activities wore disposable protective clothing (Tyvek suits) and proper respiratory protection including ½ face respirators air purifying respirators with High Efficient Particulate Air (HEPA) filters.

Decontamination

Workers performed proper decontamination upon exiting each work area by:

- Removing and disposing of protective clothing.
- Removing and Rinsing respirator.
- Showering.
- Donning street clothing.

Disposal

Action placed asbestos-containing waste material in doubled and labeled impermeable plastic bags and transported them to an enclosed polyethylene sheeting lined dumpsters for pickup and disposal.

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Air Monitoring

Sample Collection

ATC collected samples of air on 25 millimeter, mixed-cellulose ester filter membranes (0.45 micron pores) contained in manufacturer pre-assembled, three-piece cassettes with electrically conductive, extended cowls. Pump flow rates were determined (both at the start and at the end of the sampling period and periodically by a representative of the NYCDEP) with a secondary standard (rotameter) that is calibrated quarterly against a primary standard (Gilian Instrument Corporation primary flow calibrator "Gilibrator"). Fibers from ambient air were collected with the filter cassette open-faced and positioned between three to five feet above the floor.

Sample Analysis

PCM ambient and clearance samples were analyzed by ATC's New York City laboratory utilizing the PCM method of analysis. The microscope used for sample analysis was equipped with a phase contrast condenser. Sizing and fiber counts were performed at 400X magnification. Samples were analyzed by the National Institute of Occupation Safety and Health (NIOSH) Method 7400 using method "A" counting rules. Method "A" rules count only those fibers that have a length greater than five microns and a length-to-width ratio greater than three-to-one. All air sample results are reported in fibers per cubic centimeter of air (f/cc).

TEM ambient air samples were analyzed by ATC's New York City laboratory under strict AHERA protocol. TEM with Energy Dispersive X-ray analysis (EDX) involves subjecting the prepared filter media to a stream of electrons. The returning diffraction pattern is a signature for the elemental composition of the material. This allows for precise asbestos quantification.

Quality Assurance

Analysis was performed by personnel who have completed the NIOSH 582 Sampling and Evaluating Airborne Asbestos Dust course or an equivalent course.

Personnel also participate in the NIOSH/AIHA (American Industrial Hygiene Association) Proficiency Analytical Testing (PAT) Program to ensure consistency in methodology. All laboratory technicians involved in air sample analysis have received applicable EPA training.

Air Sample Results

Final air clearance samples reported concentrations of airborne fibers less than the concentrations required by the EPA for this project. The attached appendices contain all laboratory analysis information.

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Wipe Sampling

The wipe sampling was performed consistent with generally accepted industrial hygiene practices. There were inherent limitations created by constraints of time, operational and work practice variability, variations in contaminant concentrations, and sampling and analytical accuracy. The results of the sampling represent conditions found on the dates the samples were collected.

There are no established regulatory values for these analytes on surfaces.

Wipe Sample Results

Background and clearance wipe sampling was performed consistent with generally accepted industrial hygiene practices. There were inherent limitations created by operational and work practice variability, variations in contaminant concentrations, and sampling and analytical accuracy. All acceptable results of the sampling represent conditions found on the dates the samples were collected. Individual analytes specified herein were analyzed in accordance with the project specifications utilizing the following analytical procedures:

- Lead, EPA Method SW-846-6010B
- PAHs, ASTM-6661-01, EPA Method SW-846-8270C
- Dioxin, ASTM-6661-01, EPA Method SW-846-8290
- Mercury, EPA Method SW-846-7471A

Conclusions

Based on project oversight, including results of air sampling and wipe sampling data collected, it is the professional opinion of ATC that all cleaning at 125 Cedar Street, New York, New York was conducted in accordance with the project manual as well as all applicable federal, state and local asbestos regulations. All ambient and final air clearance and wipe sample results were found to have a concentration satisfactory to achieve the acceptable criteria established by the NYCDEP and EPA standards for re-occupancy following cleaning activities.

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with customary principles and practices in the field of environmental science and engineering in this region. This statement is in lieu of other statements either expressed or implied. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

This report is intended for the sole use of the NYCDEP and USEPA. The scope of

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services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations, is at risk of said user.

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Appendix A - Daily Field REportS

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Appendix B - TEM Air Sample Results DURING CLEANING

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APPENDIX C- TEM FINAL AIR SAMPLE RESULTS

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APPENDIX D - FIBERGLASS FINAL AIR SAMPLING RESULTS

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APPENDIX E - PRE & POST LEAD WIPE SAMPLING

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aPPENDIX F - PRE & POST PAH WIPE SAMPLING

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APPENDIX G - PRE & POST SILICA WIPE SAMPLING

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APPENDIX H - PRE & POST MERCURY WIPE SAMPLING

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Appendix i - PRE & POST DIOXIN WIPE SAMPLING

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