

ASBESTOS PROJECT MONITOR AND AIR SAMPLING CONTRACT

A. Introduction

All work performed under this contract must be in compliance with all applicable, relevant, and appropriate regulations and Scope of Work, including but not limited to those of the United States Environmental Protection Agency (USEPA), the United States Department of Labor, Occupational Safety and Health Administration (OSHA), the New York State Department of Labor (NYSDOL), the New York State Department of Health Environmental Laboratory Approval Program (ELAP) and the New York City Department of Environmental Protection (NYCDEP). This project shall involve coordinating and monitoring the clean up of debris and air sampling from building apartments in the vicinity of the World Trade Center explosion site.

B. Qualifications

Project Monitors

The Project Monitors must possess valid NYS Asbestos Project Monitor certificates. Monitors must have served as a third party project monitor on at least 20 asbestos abatement projects. Project Monitor must have performed final clearance inspections on at least 50 asbestos abatement projects.

Technicians

Air monitoring technicians must possess valid NYS Asbestos Project Sampling Technician (APST) certificates. Technicians must have performed air sampling for at least 6 months.

Proof of qualifications must be presented upon request.

Equipment

Sampling equipment must be in sufficient quantity to provide the amount and type of samples required for this project. At a minimum the following equipment are required: air-sampling pumps with flow rate capacities of 2 to 10 liters per minute, tripods, rotometers, sample cassettes with mixed cellulose ester filters having pore size of 0.45um(TEM).

C. Specifications

Clean up activities shall be scheduled for 20 to 30 units per day. Air sampling shall also be provided at 10 to 20 units where clean up activities are not scheduled. Sufficient personnel shall be available for project monitoring and sampling.

The Project Monitor shall direct and coordinate all services and report all findings to USEPA. The scope of this project will be as follows:

1. The Project Monitors shall be responsible for receiving information from the EPA Hotline, scheduling cleaning-up activities and air sampling with the tenants/owners, asbestos abatement contractors and air monitoring technicians to the various apartments.

2. Air monitoring technicians must be on-site during clean-up activities to collect final clearance samples.
3. The Project Monitor shall ensure that the clean up activities comply with the NYCDEP Scope of Work.

Post Clean-up Air Sampling Procedure must be as followed:

- a) Sampling shall not begin until a visual inspection confirms the absence of visible debris.
 - b) All surfaces must be completely dry prior to the start of sampling.
 - c) Sampling equipment shall be placed at representative locations within the work area and away from obstructions. **The sampling cassette must be placed on a tripod and not taped to existing surfaces.**
 - d) Air conditioning units where applicable shall be run/operated at least 15 minutes prior to the start of sampling. The air conditioning units shall operate continuously throughout the sampling. HVAC systems shall be in operation during sampling.
 - e) Forced air equipment (e.g. leaf blowers) may be used only after written authorization by the occupant or his/her authorized representative. The project manager shall advise the occupant or his/her authorized representative on the advantages and disadvantages regarding the use of the equipment and obtain the individual's signature authorizing use. Before the start of sampling, forced air equipment (such as a 1 horsepower leaf blower) may be used to direct exhaust air against walls, ceilings, floor, ledges and other surfaces. When directing the exhaust, caution shall be taken to minimize disturbance and potential damage to furnishings and personal belongings.
 - f) One 20-inch fan shall be installed per 10,000 cubic feet of room space and run at low speed. The fan shall operate continuously throughout sampling and shall not be turned off until sampling is completed.
 - g) For studio apartments 3 samples shall be collected. For 1-bedroom apartments and above 5 samples shall be collected. Technicians shall collect a volume of 3000 liters per sample using a flow rate of 10 liters per minute.
 - h) Samples must be labeled and accompanied with completed chain of custody forms before shipping to the designated laboratory.
 - i) Project Monitor shall perform all final visual inspections.
 - j) All information must be maintained on a data based software program that is acceptable to the USEPA.
4. Project reports, including a project completion sign-off signed by the project monitor and the occupant or his/her authorized representative, must be typed and forwarded to USEPA with a copy to NYCDEP.

World Trade Center Indoor Dust Cleaning Program
Cleaning Contract Scope of Work
DRAFT 8/8/02

A. Introduction

All work performed under this contract entered into between the New York City Department of Environmental Protection (DEP) and the cleaning contractor must be in compliance with all applicable laws and regulations, including but not limited to regulations issued by the United States Environmental Protection Agency (EPA), the United States Department of Labor Occupational Safety and Health Administration (OSHA), the New York State Department of Labor (NYS DOL), and the New York City Department of Environmental Protection (DEP).

The EPA and DEP will solicit participation in a direct assistance program for residents and residential building owners south of Canal Street who are concerned that their residences may have debris/dust from the collapse of the World Trade Center (WTC). A DEP/EPA telephone hotline has been established to receive requests from the public. The assistance will include various options, including cleaning within residences and common spaces by licensed asbestos contractors with follow-up asbestos sampling, asbestos air sampling only, and providing high efficiency particulate air (HEPA) vacuums.

NYS DOL licensed asbestos contractors shall perform cleaning activities for residents who wish to have their homes cleaned. An independent Monitoring Contractor will schedule and monitor the work, perform a visual inspection, and perform asbestos air sampling when the cleaning is completed.

The purpose of this contract is to acquire the services of a NYS DOL licensed asbestos contractor with DEP and NYS DOL certified workers for the performance of cleaning activities at residential buildings impacted by the collapse of the World Trade Center. The scope of work for the cleaning activities is attached. The cleaning contractor shall supply all equipment and supplies necessary to perform the work specified in this contract.

B. Roles and Responsibilities

As provided in the instant contract, EPA's World Trade Center Dust Cleanup Field Personnel shall have the authority of Project Manager, in addition to DEP's Project Manager. As such, the authority of EPA World Trade Center Dust Cleanup Field Personnel shall include the following authority related to cleaning work conducted under this contract:

1. The authority to stop work for health and safety reasons.
2. The authority to stop work for non-compliance with the Scope of Work.
3. The authority to give technical direction to the contractor in the performance of the work.
4. The authority to review and approve or disapprove of the qualifications and performance of the cleaning personnel involved in the work.
5. The right to inspect and accept or reject any work .

An independent Monitoring Contractor will perform air monitoring. The Personal air monitoring

will be performed by the Monitoring Contractor on a minimum of one employee of the Cleaning Contractor per shift per apartment during the first 6 weeks of cleaning operations. Thereafter, personal air samples will be taken randomly at a rate of one sample per day. The results of this sampling shall be sent immediately to EPA, OSHA and the cleaning contractor. The cleaning contractor shall make these results available to the employees or their designated representatives for their review in accordance with 29 CFR 1910.1020 and 29 CFR 1926.1101.

The Monitoring Contractor is responsible for:

1. Scheduling and coordinating the cleaning and monitoring work with residents, building owners, the Cleaning Contractor and EPA;
2. HVAC system evaluation and inspection;
3. Oversight of the Cleaning Contractor;
4. Inspection of the Cleaning Contractor's work;
5. Area air monitoring; and
6. Personal air monitoring.

The Cleaning Contractor is responsible for cleaning residences, common spaces and portions of HVAC systems identified by the Monitoring Contractor.

C. Qualifications

This contract requires that only a NYS DOL licensed asbestos contractor and only NYC DEP and NYS DOL certified workers will be allowed to perform any of the cleaning activities under this contract. This requirement also applies to any subcontractors involved in the cleaning. A copy of these licenses and certificates must be available on-site during the performance of work and must be presented upon request.

The HVAC system cleaning contractor shall be a certified members of the National Air Duct Cleaners Association (NADCA) or shall maintain membership in a nationally recognized non-profit industry organization dedicated to the cleaning of HVAC systems. If the cleaning contractor is not a member of the NADCA, a subcontractor that is a member may perform the HVAC system cleaning.

All contractors and subcontractors involved in the cleaning activities under this contract are responsible for completing a background check on their employees and for screening unacceptable candidates from the pool of on-site workers. Background checks shall be completed with 30 days of the award of the contract. Thereafter, background checks shall be completed prior to employees beginning on-site work. EPA will provide guidelines for evaluating the background information collected. Contractors are required to maintain records of background checks for 4 years and to make them available to the DEP and EPA when requested. At a minimum, the background check must include:

1. Law enforcement checks (5 years)
2. Professional license and certification

D. Specifications

This contract between DEP and the cleaning contractor shall be in force for 24 consecutive months from the commencement date. The cleaning contractor must be prepared to mobilize within 72 hours of the contract award. The contractor shall have on staff and assigned to this contract a sufficient number of properly trained and certified workers to clean 20 units simultaneously and complete the cleaning activities in each residence within no more than 2 days. The contractor shall be prepared to work 7 days per week. Activities shall be coordinated with the Monitoring Contractor to ensure that the visual inspection is performed within two hours of the completion of cleaning activities. Cleaning activities shall be considered completed upon successful visual inspection by the Monitoring Contractor. Copies of all invoices for work conducted under this contract shall be provided to EPA. EPA will review submitted invoices to confirm that the work has been completed and forward them to DEP for processing. Decisions regarding the reimbursement of costs will be made by DEP.

Electricity and water necessary to conduct the work required under this contract will be provided by the owner or occupant of the work area.

All cleaning operations will be conducted in accordance with either Scope A or Scope B as described below.

HEPA means a filter system capable of trapping and retaining 99.97% of all mono-dispersed particles of 0.3 micrometers in diameter.

Vacuum or HEPA vacuum means a vacuum cleaner equipped with a HEPA filter, with a minimum static water lift of 95 inches.

Water extraction cleaner means a water extraction carpet cleaner equipped with a motorized agitator brush for carpet cleaning and upholstery nozzle with a minimum static water lift of 95 inches.

The cleaning contractor shall attend the mandatory pre-bid meeting and project kick off meeting prior to the commencement of work. The cleaning contractor shall as requested, attend meetings or participate in conference calls with EPA to coordinate field activities.

The cleaning contractor shall apply for any and all necessary permits and applications necessary to complete the work.

Scope of Work A

Application: These procedures apply to the cleaning of minimal dust accumulations (light coating). If a visual inspection indicates the presence of significant accumulations of dust and/or debris from the collapse of the WTC in residences or common spaces (including elevator shafts), Scope B procedures shall be applied (refer to Scope of Work B). Residents may be present during Scope A cleaning procedures.

1. Cleaning of Common Spaces
Common spaces including hallways, stairways and the interior of elevator cars shall be

cleaned, if requested by the building owner. The Monitoring Contractor in consultation with EPA, or EPA's designee will evaluate and determine if other common areas including utility rooms, laundry rooms, compactor rooms, elevator shafts require cleaning. Work will begin from the entrance and continue through all common spaces in an orderly fashion. A detailed description of the minimum cleaning requirements for common space is as follows:

- a. Vacuuming will begin with the ceiling, continue down the walls and include floors. A vacuum equipped with a motorized agitator bar will be used to vacuum carpets.
- b. Impermeable walls and floors will be wet wiped, after consultation with and approval by owner. Wet wiping will not be conducted if it is determined that it would cause damage to the surface.
- c. Carpets will be cleaned with a water extraction cleaner after consultation with and approval by owner. After cleaning, red rosin construction paper will be applied to high traffic areas to protect carpets from soiling. Water extraction cleaning will not be conducted if it would cause damage to the carpet.
- d. Surfaces that are not cleaned by wet methods (wet wiping and water extraction cleaner) will be vacuumed two times.

2. Cleaning of HVAC Systems

HVAC systems that are determined by the Monitoring Contractor to be impacted by dust or debris from the collapse of the World Trade Center will be cleaned in accordance with the site-specific scope of work prepared by the Monitoring Contractor and approved by EPA. HVAC systems cleaning, if warranted, shall be completed prior to the initiation of the cleaning of common space or residences within an affected building. In the event that the HVAC system for an entire building requires cleaning, a separate, site specific contract will be awarded by DEP for this work. If only a portion of an HVAC system requires cleaning, then the cleaning contractor will conduct the cleaning utilizing specialized labor trained and experienced in duct cleaning.

HVAC cleaning shall be conducted in accordance with National Air Duct Cleaners Association (NADCA) General Specification for the Cleaning of Commercial Heating, Ventilating and Air Conditioning Systems and the NADCA Assessment, Cleaning and Restoration Standard (ACR 2002). Verification of the effectiveness of HVAC system cleaning will be determined by the Monitoring Contractor. If dust or other contaminants are evident through visual inspection, those portions of the system where dust or other contaminants are present shall be recleaned and subjected to reinspection for cleanliness. If the cleaning contractor is not a member of the NADCA, a subcontractor that is a member may perform this portion of the work.

3. Cleaning of Residential Spaces

Residences will be cleaned using HEPA vacuums, water extraction cleaners and wet wiping as described below. Surfaces to be cleaned include but are not limited to walls, floors, ceilings, ledges, trims, furnishings, appliances, equipment, etc. Encapsulating agents shall not be applied. Dry sweeping is prohibited. The cleaning contractor will not clean inside of drawers, cabinets, breakfronts and similar enclosed storage or display

pieces, however, the exterior of these pieces will be cleaned. Cleaning of clothing and accessories (handbags, shoes etc.) shall be the responsibility of the occupant. A detailed description of the minimum cleaning requirements is as follows:

- a. Terraces, balconies, exterior window sills, window wells and window guards that are accessible from the interior of the dwelling, shall be cleaned.
- b. Interior windows, screens, window sills and window guards will be cleaned
- c. Vacuuming will begin with the ceiling, continue down the walls and include the floor. A vacuum equipped with a motorized agitator bar will be used to vacuum carpets.
- d. Impermeable walls and floors will be wet wiped, after consultation with and approval by owner/resident. Wet wiping will not be conducted if it is determined that it would cause damage to the surface.
- e. Carpets will be cleaned with a water extraction cleaner after consultation with and approval by owner/resident. After cleaning, red rosin construction paper will be applied to high traffic areas to protect carpets from soiling. Water extraction cleaning will not be conducted if it would cause damage to the carpet.
- f. Fabric covered furniture will be vacuumed and then cleaned with a water extractions cleaner after consultation with and if approved by owner/resident. Water extraction cleaning will not be conducted if it would cause damage to the furniture.
- g. All surfaces including but not limited to floors, walls, curtains, fabric window treatments, upholstery and other materials that are not cleaned by wet methods (wet wiping and water extraction cleaning) will be HEPA vacuumed two times. Fabric covered furniture that is not cleaned by wet methods will be vacuumed using an appropriate brush attachment.
- h. Intake/discharge registers of HVAC systems (if present) will be removed/cleaned. The first foot of duct work will also be vacuumed; then the register will be reinstalled and covered with a layer of 6 mil polyethylene sheeting.
- i. Window and room air conditioners will be vacuumed, wet wiped and removed from their housing to allow access to internal portions of the air conditioner. The internal portions of the air conditioner and housing will then be vacuumed. Filters will be vacuumed and reinstalled. Air conditioners will be reassembled and reinstalled after cleaning.
- j. Paperwork and books will be HEPA vacuumed.
- k. Electrical outlets will be vacuumed.
- l. Appliances such as refrigerators and stoves will be cleaned and moved. The floor footprint of the appliances will be cleaned and the appliance will be reinstalled in their original positions.
- m. Refrigerator cooling tubes will be brushed and vacuumed.
- n. The first foot of all exhaust duct work (including stove, dryer and bathroom vents) where accessible, will be vacuumed. Exhaust fans will be vacuumed and wiped
- o. Unobstructed closet floors will be vacuumed.
- p. Solid objects (electrical equipment, exercise equipment, etc.) will be wet wiped, moved to allow cleaning of the underlying surface and will be returned to their original location.
- q. Dishwasher toe plates will be removed and the floor beneath the appliance will be

- cleaned.
 - r. Baseboard heaters will be cleaned. Protective covers on finned radiant heaters and baseboard heaters will be removed to expose heat elements. Fins are to be brushed and vacuumed to remove dust.
 - s. All cleaning equipment will be vacuumed and/or wet wiped after completion of the cleaning and before removal from the work area.
4. HEPA air filtration devices (AFDs) will run continuously during all cleaning activities, as appropriate given site conditions. AFDs shall be installed and operated to provide a minimum of one air change every 15 minutes. Make up air should be derived from a non-impacted source (i.e. open window or common spaces previously cleaned).
5. A minimum of one asbestos supervisor shall be present in each building during work.
6. A Cleaning Checklist (to be developed by EPA) will be completed by the cleaning contractor as tasks are completed to document the progress of the cleaning.
7. The cleaning contractor shall notify the monitoring contractor immediately upon completion of the cleaning. The Monitoring Contractor will conduct a thorough visual inspection to verify the absence of visible dust accumulations. If dust is observed the cleaning contractor will reclean as necessary at no additional cost.
8. Air sampling shall be performed by the Monitoring Contractor after the area is free of dust accumulations as determined by the Monitoring Contractor. The residence will be recleaned and retested if the clean-up criteria of 0.0009 fibers/cc (PCME measured by TEM) is not achieved or if determined necessary by EPA. This clean-up criterion may be reevaluated and revised, if determined necessary based on field conditions and analytical limitations.
9. Any damage or loss that occurs during cleaning is the responsibility of the cleaning contractor. The cleaning contractor is not responsible for damage or loss caused by the acts of third parties not involved in the cleaning activities.
10. Owner/residents may identify and tag certain furnishings (e.g. carpets and fabric covered furniture) for disposal rather than cleaning. Disposal of residents' personal property shall not occur without prior written authorization by the owner.
11. Disposal of all wastes generated during the cleaning shall be the responsibility of the contractor. All waste generated shall be treated as asbestos-containing material (ACM). Transportation and disposal of generated waste shall be in compliance with all applicable rules and regulations.
12. If mold or peeling, flaking or chalking paint is observed in the work area, the cleaning contractor shall immediately contact the Monitoring Contractor.

13. If in-place materials suspected to contain asbestos are observed the Cleaning Contractor shall immediately notify the Monitoring Contractor. The Monitoring Contractor will evaluate the condition of the material to identify damaged, deterioration, delamination, etc. The Cleaning Contractor shall wrap suspect ACM that is in good or excellent condition with 6-mil polyethylene sheeting and seal airtight with duct tape or equivalent method prior to cleaning or air monitoring.
14. In the event that damaged, deteriorated, delaminated, etc. suspected ACM is observed, the Cleaning Contractor will notify the Monitoring Contractor. Cleaning or air monitoring will not proceed in areas where such suspected ACM is observed until instructed otherwise.

Scope of Work B

Application: A visual inspection was performed and large or significant accumulations of dust or debris from the collapse of the WTC was observed in common spaces, residences or portions thereof (such as windows, terraces or balconies).

Residents will not be allowed in the work area. Residents may be present in the residence during cleaning in cases where the work area can be isolated by the erection of isolation barriers. In all other applications of Scope B it is assumed that residents will not be present in the residence.

1. The cleaning contractor shall meet with EPA or the Project Monitor if requested, to discuss site specific procedures for debris removal, isolation of the work space and worker decontamination.
2. An asbestos project notification form (NYC form ACP-7) shall be submitted, as required by Title 15, Chapter 1 of the Rules of the City of New York (RCNY), directly to the NYC DEP Asbestos Control Program prior to the start of work. NYS DOL notification may also be required.
3. At least one asbestos supervisor shall be present at each work place (work place is defined in Title 15, Chapter 1 of RCNY as the work area and the decontamination enclosure system).
4. Personal protective equipment including disposable clothing, gloves, and respirators shall be worn during this cleaning activity.
5. Warning signs shall be posted at all of the approach to the work area.
6. A decontamination enclosure system shall be installed at the entrance to the work area.

The shower room shall be equipped with at least a 6-foot flexible hose for waste decontamination. A remote holding area with a lockable door for waste shall be located at the site and shall comply with all applicable storage rules and regulations. Waste removal shall not occur during worker shift changes or when workers are showering or changing.

An entry/exit log in compliance with the requirements set forth in Title 15, Chapter 1 of RCNY shall be maintained in the clean room.

A remote decontamination enclosure system shall be considered when appropriate, i.e. inability to comply with the provision due to space limitation or other agency rules, such as for compliance with New York City Fire Department egress requirements.

7. HVAC systems shall be shut down and locked out or isolated locally.
8. Isolation barriers shall be installed with two layers of 6-mil polyethylene sheeting and

sealed with tape.

9. Negative pressure ventilation equipment (air filtration devices (AFDs)) shall be installed and operated during all cleaning activities. Equipment shall run continuously until clearance air monitoring. A minimum of one air change every 15 minutes shall be provided. When ducting to the outside is not possible, a second negative pressure ventilation unit compatible with the primary unit may be connected in series.
10. When conducting cleaning of common space in apartment buildings, the elevator control shall be modified to bypass the work area.
11. Prior to any cleaning of common spaces, isolation barriers (i.e. sealing off of all openings, including but not limited to windows, corridors, doorways, barriers, skylights, ducts, grills, diffusers, and any other penetrations of the workplace) shall be installed with two layers of 6-mil plastic sheeting sealed with tape. All seams of HVAC or other system components that pass through the work place shall also be sealed. All openings shall be HEPA vacuumed prior to installing the isolation barrier.
12. All WTC debris shall be misted and double-bagged. Accumulation of water is prohibited. Water misting shall be sufficient to wet the material without water accumulations.
13. After the removal of debris, all surfaces will be cleaned in accordance with the procedures specified in Scope A. After all surfaces have been cleaned, a second cleaning shall be performed. This results in two full cleanings of all surfaces, with the following exception. Water extraction cleaning of carpets and fabric covered furniture will be conducted only once. Surfaces include but are not limited to walls, floors, ceilings, ledges, trims, appliances, equipment and furnishings.
14. Residents may identify and tag certain furnishings (e.g. carpets and fabric covered furniture) for disposal rather than cleaning. Disposal of residents' personal property shall not occur without prior written authorization.
15. Disposal of all wastes generated during the cleaning shall be the responsibility of the contractor. All waste generated shall be treated as asbestos-containing material (ACM). Transportation and disposal of generated waste shall be in compliance with all applicable rules and regulations.
16. A Cleaning Checklist (to be provided by EPA) will be completed by the cleaning contractor as tasks are completed to document the progress of the cleaning.
17. An activity log will be maintained by the site supervisor.
18. The cleaning contractor shall notify the monitoring contractor immediately upon completion of the cleaning. The Monitoring Contractor will conduct a thorough visual inspection to verify the absence of visible dust accumulations. If dust is observed, the

cleaning contractor will reclean as necessary at no additional cost.

19. Air sampling shall be performed by the Monitoring Contractor after the area is free of dust accumulations as determined by the Monitoring Contractor. The residence will be recleaned and retested if the clean-up criteria of 0.0009 fibers/cc (PCME measured by TEM) is not achieved or if determined necessary by EPA. This clean-up criterion may be reevaluated and revised, if determined necessary based on field conditions and analytical limitations.
20. After successful clearance air monitoring, isolation barriers shall be removed in conjunction with the use of a HEPA vacuum.
21. Any damage or loss that occurs during cleaning is the responsibility of the cleaning contractor. The cleaning contractor is not responsible for damage or loss caused by the acts of third parties not involved in the cleaning.
22. All work shall be in compliance with all other applicable requirements of Title 15, Chapter 1 of the RCNY and New York Industrial Code Rule 56.
23. If mold or peeling, flaking or chalking paint is observed, the cleaning contractor shall immediately contact the Monitoring Contractor.
24. If in-place materials suspected to contain asbestos are observed the Cleaning Contractor shall immediately notify the Monitoring Contractor. The Monitoring Contractor will evaluate the condition of the material to identify damaged, deterioration, delamination, etc. The Cleaning Contractor shall wrap suspect ACM that is in good or excellent condition with 6-mil polyethylene sheeting and seal airtight with duct tape or equivalent method prior to cleaning or air monitoring.
25. In the event that damaged, deteriorated, delaminated, etc. suspected ACM is observed, the Cleaning Contractor will notify the Monitoring Contractor. Cleaning or air monitoring will not proceed in areas where such suspected ACM is observed until instructed otherwise.