

Gilsenan, Michael

From: Gilsenan, Michael (ex)
Sent: Thursday, June 13, 2002 11:38 AM
To: Radhakrishnan, Krish
Subject: FW: Cleaning and Monitoring SOWs- latest draft, please review and comment by noon tomorrow. Thanks.



CLEANING_SOW.wpd



Monitoring_SOW.wpd

-----Original Message-----

From: LaPosta.Dore@epamail.epa.gov [mailto:LaPosta.Dore@epamail.epa.gov]

Sent: Tuesday, June 11, 2002 11:51 AM

To: david.ippolito@osha.gov; michaelgi@dep.nyc.gov

Cc: Basso.Ray@epamail.epa.gov

Subject: Cleaning and Monitoring SOWs- latest draft, please review and comment by noon tomorrow. Thanks.

latest versions

Dore LaPosta

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----- Forwarded by Dore LaPosta/R2/USEPA/US on 06/11/02 11:44 AM -----

Ray Basso

EricJ

06/11/02 11:26
AM

Rotola/R2/USEPA/US@EPA,

callahan.kathy@epa.gov, Thomas

Tulis/DC/USEPA/US@EPA, Mary

Stapleton/R2/USEPA/US@EPA,

latest draft,

Thanks.

To: Mark Maddaloni/R2/USEPA/US@EPA,

Wilson/R2/USEPA/US@EPA, Andrew
Confortini/R2/USEPA/US@EPA, Dilshad
Perera/R2/USEPA/US@EPA, Robert
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cc:

Subject: Cleaning and Monitoring SOWs-

please review and comment by noon tomorrow.

(See attached file: CLEANING_SOW.wpd) (See attached file:
Monitoring_SOW.wpd)

Indoor Air Residential Assistance Program
Cleaning Contract Scope of Work
DRAFT - 6/11/02

A. Introduction

All work performed under this contract must be in compliance with all applicable, relevant, and appropriate regulations, 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 (NYS DOL), and the New York City Department of Environmental Protection (DEP).

The USEPA and DEP will solicit participation in a direct assistance program for residents and residential building owners who are concerned that their apartments may have debris/dust from the attack and collapse of the World Trade Center (WTC). A DEP/USEPA telephone hotline has been established to receive requests from the public. The assistance will include various options, including the cleaning within apartments and common spaces by licensed asbestos contractors with follow-up asbestos sampling, asbestos air sampling only, and providing high efficiency particulate air (HEPA) vacuums. HEPA means a filter system capable of trapping and retaining 99.97% of all mono-dispersed particles of 0.3 micrometers in diameter.

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

A third party Monitoring Contractor will perform air monitoring. Personal air monitoring will be performed on a minimum of one worker per shift per apartment during for the first 4 - 6 weeks of cleaning operations. Thereafter personal air samples will be taken randomly at a rate of one sample per quadrant per day. These results of this sampling shall be sent immediately to USEPA, DEP, OSHA and the employer. The employer will make these results available to the employees or their designated representatives for their review in accordance with 29 CFR 1910.1001 and 29 CFR 1926.58.

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 clean-up activities at residential buildings impacted by the attack and collapse of the World Trade Center. The scope of work for the clean-up activities is attached.

B. Roles and Responsibilities

The USEPA On-Scene Coordinator (OSC) has overall responsibility for insuring that work conducted as part of the Indoor Air Residential Assistance Program is completed safely, efficiently and in a compliance with the Scope of Work. As such, the OSC or designee shall have the following authorities relating to work conducted under this contract:

1. *The OSC has the authority to stop work for health and safety reasons or for non-compliance with the Scope of Work.*
2. *The OSC has the authority to direct the contractor in the performance of the work.*
3. *The OSC has the authority to review and approve or disapprove of the qualifications of all contractor personnel involved in the work.*
4. *The OSC has the right to inspect and accept or reject any work .*

[Input DEP Roles and Responsibilities for contract officer and project manager]

C. Qualifications

All work shall be performed by a NYS DOL licensed contractor with NYS DOL- and NYC DEP-certified workers. Proof of qualifications must be presented upon request.

D. Specifications

This contract shall be in force for 18 consecutive months from the commencement date. Contractors must be prepared to mobilize within 72 hours of the contract award. Contractors shall provide a sufficient crew size to clean 20 units simultaneously and complete the clean up activities within each unit within 2 days. A minimum of twenty (20) units shall be cleaned simultaneously. Activities shall be coordinated with the project monitor to ensure that the visual inspection is performed within two hours of the completion of clean-up activities. Post clean-up air sampling shall be completed within 24-hours of the completion of clean-up activities. Cleaning activities shall be considered completed after the Project Monitor has determined that the cleanup criteria has been met. Copies of all invoices for work conducted under this contract shall be provided to USEPA and DEP.

The contractor shall prepare a Health and Safety Plan (HASP) in with 29CFR1910.1020 and 29 CFR 1926.58. All personnel involved in residential cleaning activities shall follow the contractor HASP prepared by their employer. EPA shall be provided with a copy of the employer HASP prior to the start of work. Individuals performing clean up activities may wear personal protective equipment or respirators in accordance with their employers health and safety plan. All cleanup operations will be conducted in accordance with either Scope A or Scope B as described below.

Scope of Work A

Application: These procedures apply to the clean-up 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 Scope B procedures shall applied (refer to Scope of Work B). Residents may be present during Scope A cleaning procedures. If resident chooses not be present, liability issues must be addressed with the Cleaning Contractor. (needs legal input on specific language).

1. Cleaning of Common Spaces

Common spaces will be cleaned if requested by the building owner or determined necessary by USEPA or designee. The cleanup contractor will initiate the cleanup by vacuuming all common spaces. This includes hallways, utility rooms, laundry rooms, compactor rooms and elevators interiors. If elevator shafts are determined to contain significant WTC dust and or debris, cleanup will proceed under the Scope B site specific work plan. Work will begin from the entrance and continue through all common spaces in an orderly fashion. Cleaning will begin at the ceiling and continue down the walls to the floor. Windows and screens will be vacuumed/washed as encountered. Work will continue to the next floor via stair ways. Appliances will be moved to permit complete cleaning. Dryer vents and filters will be cleaned and replaced.

2. Cleaning of Residential Spaces

All horizontal hard surfaces shall be HEPA vacuumed and wet wiped. Vertical and soft surfaces shall be HEPA vacuumed two times. Surfaces 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. Cleaning of clothing and accessories (handbags, shoes etc.) shall be the responsibility of the occupant. A detailed description of the minimum cleaning requirements are as follows:

- a. Terraces, balconies, exterior window sills and window guards that are accessible from the interior of the dwelling, will be cleaned.
- b. Interior windows, screens, window sills and window guards will be cleaned
- c. Vacuuming will begin at the ceiling and continue down the walls to the floor.
- d. Carpets, curtains, fabric window treatments, upholstery, and other materials that cannot be cleaned by wet wiping shall be HEPA vacuumed two times. Carpets will be vacuumed using an agitator bar. Fabric covered furniture will be vacuumed using a stiff brush attachment.
- e. Solid floors will be mopped.
- f. Plants shall be cleaned by rinsing leaves with water.
- g. Paperwork, books shall be HEPA vacuumed.
- h. Electrical outlets, baseboard heating elements will be vacuumed.
- i. Window air conditioners will be vacuumed then dismantled and vacuumed internally. Filters will be cleaned and replaced. Air conditioners will be reassembled after cleaning.
- j. Central HVAC intake/discharge registers (if present) will be removed/cleaned. The first foot of duct work will also be vacuumed, then the register will be replaced and covered with plastic.
- k. 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 replaced in its original position.
- l. Refrigerator cooling tubes will be brushed and vacuumed.
- m. Stove storage drawers will be vacuumed if present. Stove cook tops will be opened and vacuumed. Stove exhaust fan filters will be cleaned or replaced.
- n. The first foot of all exhaust duct work (including stove, dryer and bathroom vents) will be

- o. vacuumed. Exhaust fans will be vacuumed and wiped.
 - p. Closet interiors will be vacuumed.
 - q. Solid objects (electrical equipment, exercise equipment, etc.) will be wet wiped, moved to allow cleaning of the underlying surface and will be returned to its original location.
 - r. Dishwashers toe plates will be removed and the floor beneath the appliance will be cleaned.
 - s. 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 washed for use on the residence.
3. HEPA air filtration devices (AFDs) will run continuously during all cleaning activities. A minimum of one air change every 30-minutes shall be provided.
 4. At least one asbestos supervisor shall be present at each work place (work place is defined in Title 14, Chapter 1 RCNY as the work area and the decontamination enclosure system).
 5. A cleaning checklist (to be developed) will be completed by the supervisor at the completion of the cleaning.
 6. A thorough visual inspection will be conducted by the Project Monitor to verify the absence of visible dust accumulations. Additional clean-up procedures shall be performed where visible dust is observed.
 7. Air sampling shall be performed by the Monitoring Contractor after the area is free of dust accumulations as determined by the Project Monitor. If the apartment does not meet the cleanup criteria of 0.0009 fibers/cc(TEM), the apartment will be recleaned at no additional cost and retested. [needs additional analytical language]
 8. Any damage or loss to 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 parties not involved in the cleanup.
 9. All waste generated shall be treated as asbestos containing material and shall be transported and disposed of in compliance with Title 15, Chapter 1 of the Rules of the City of New York and New York Industrial Code Rule 56. Transportation and disposal of generated waste shall be in compliance with all applicable rules and regulations.

Scope of Work B

Application: A visual inspection was performed and the presence of significant accumulations of dust and/or debris from the collapse of the WTC was identified by USEPA or designee. In some unique circumstances, Scope B may be applied on a limited basis within a unit as determined necessary by the Monitoring Contractor in consultation with EPA. Residents may be present depending on these unit specific circumstances. In all other applications of Scope B it is assumed that residents will not be present.

1. A site specific work plan will be prepared for review and approval by USEPA prior to the start of work. This work plan will include detailed procedures for the removal of dust and debris and the cleaning.
2. An ACP-7 form asbestos project notification form shall be submitted directly to the NYC DEP Asbestos Control Program prior to the start of work. NYS DOL notification shall be submitted.
3. At least one asbestos supervisor shall be present at each work place (work place is defined in Title 14, Chapter 1 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 clean-up activity in accordance with OSHA rules and regulations.
5. Warning signs shall be posted at the approach to the work area.
6. A worker decontamination enclosure system shall be installed at the entrance to the work area. 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 NYC FD egress requirements.
7. HVAC systems shall be shut down and locked out or isolated locally. The site specific work plan shall provide additional information on the HVAC system and proposed procedures for shutdown or isolation.
8. Isolation barriers shall be installed with two layers of 6-mil polyethylene sheeting and sealed with tape.
9. Negative pressure ventilation equipment shall be installed and operated during all clean-up activities. Equipment shall run continuously until clearance air monitoring. A minimum of one air change every 30 minutes shall be provided. When ducting to the outside is not possible, a second negative pressure ventilation unit compatible with the primary unit capacity may be connected in series.

10. 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. After the removal of debris, all surfaces shall be HEPA vacuumed and wet wiped. Encapsulating agents shall not be applied. Once all surfaces have been HEPA vacuumed and wet wiped, a second cleaning shall be performed. Surfaces include but are not limited to walls, floors, ceilings, ledges, trims and furnishings.
11. Surfaces that may not be wiped shall be HEPA vacuumed three times or disposed as ACM waste. Disposal of residents personal property may not occur without prior authorization by USEPA and the owner.
12. A cleaning checklist (to be developed) will be completed by the supervisor at the completion of the cleaning.
13. A thorough visual inspection will be conducted by the Project Monitor to verify the absence of visible dust accumulations. Additional clean-up procedures shall be performed where visible dust is observed.
14. After successful clearance air monitoring isolation barriers shall be removed in conjunction with the use of a HEPA vacuum.
15. Air sampling shall be performed by the Monitoring Contractor after the area is free of dust accumulations as determined by the Project Monitor. If the apartment does not meet the cleanup criteria of 0.0009 fibers/cc(TEM), the apartment will be recleaned at no additional cost and retested. [additional analytical language required]
16. Any damage or loss to 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 parties not involved in the cleanup.
17. All work shall be in compliance with all other applicable requirements of Title 15, Chapter 1 of the Rules of the City of New York and New York Industrial Code Rule 56. Transportation and disposal of generated waste shall be in compliance with all applicable rules and regulations.

Indoor Air Residential Assistance Program
Monitoring Contract Scope of Work
DRAFT - 6/11/02

A. Introduction

All work performed under this contract must be in compliance with all applicable, relevant, and appropriate regulations and this 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 (USOSHA), 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 scheduling, coordinating and monitoring the clean up of dust/debris and air sampling from building apartments impacted by the attack and collapse of the World Trade Center.

B. Roles and Responsibilities

The USEPA On-Scene Coordinator (OSC) has overall responsibility for insuring that work conducted as part of the Indoor Air Residential Assistance Program is completed safely, efficiently and in a compliance with the Scope of Work. As such, the OSC or designee shall have the following authorities relating to work conducted under this contract:

1. *The OSC has the authority to stop work for health and safety reasons or for non-compliance with the Scope of Work.*
2. *The OSC has the authority to direct the contractor in the performance of the work.*
3. *The OSC has the authority to review and approve or disapprove of the qualifications of all contractor personnel involved in the work.*
4. *The OSC has the right to inspect and accept or reject any work .*

[input DEP Roles and Responsibilities for contract officer and project manager]

C. Qualifications

Proof of qualifications must be presented upon request, including qualifications for wipe sampling, personal monitoring, HVAC and mold expertise.

Project Monitors

The Project Monitors must possess valid NYS Asbestos Project Monitor certificates. Project 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.

The Project Monitor must have access to translation services to conduct scheduling visits with residents.

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.

D. 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.

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 10 liters per minute, tripods, rotometers, sample cassettes with mixed cellulose ester filters having pore size of 0.45um. Contractors should be prepared to go to 0.8um filters if 0.45um filters clog.

The contractor shall prepare a Health and Safety Plan (HASP) in accordance with 29 CFR 1910.1001 and 29 CFR 1926.58. All personnel involved in residential cleaning and monitoring activities shall follow the contractor Health and Safety Plan (HASP) prepared by their employer. EPA shall be provided with a copy of the employer HASP prior to the start of work. Individuals performing clean up activities may wear personal protective equipment or respirators in accordance with their employer's health and safety plan. All cleaning operations will be conducted in accordance with the Cleaning Contract Scope of Work.

Copies of all invoices for work conducted under this contract shall be provided to USEPA and DEP.

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 Monitor shall be responsible for accessing a secure EPA Website (url, user name and password to be provided by EPA). In coordination with the USEPA OSC, the Project Monitor will access residential services requested from the Website and schedule clean-up activities and air sampling with the tenants/owners, project monitors, asbestos abatement contractors and air monitoring technicians to the various apartments. The Project Monitor will then supply relevant information on activities back into the EPA Indoor Air database via the secure EPA website. *Data to be input may include but is not limited to start and completion dates for the cleaning, sampling dates and sample identification numbers.*

2. The Project Monitor will schedule and conduct pre-cleaning and pre-sampling inspections of the apartments, HVAC systems and common spaces. Residents will be provided with information regarding sampling options (aggressive and modified aggressive sampling protocols) and the handling of valuable personal items (money, jewelry, heirlooms) during work. The Project Monitor will obtain written access and authorization to clean the apartments, heating ventilation and air conditioning (HVAC) systems and common spaces using the USEPA Access Agreement (to be provided). The Project Monitor will advise EPA if any of the following conditions are observed: mixed residential and commercial use within a building; dust and/or debris in common spaces; the presence of mold that may pose a hazard to residents or workers (guidelines to be provided); residents with special needs; or other circumstances that may require deviation from the procedures specified in Scope of Work. In consultation with EPA, the Project Monitor will make a determination of the appropriate Cleaning Contract Scope of Work (i.e. Scope A or B) to be employed. *This determination is to be made based on the descriptions included in the Cleaning Contract Scope of Work and best professional judgement.*
3. The Monitoring contractor shall evaluate all HVAC systems in all buildings where cleaning will take place to determine if these systems have been impacted by dust or debris from the collapse of the World Trade Center and if these systems require cleaning. The Monitoring Contractor will clean impacted HVAC systems utilizing specialized labor trained and experienced in duct cleaning. No residential or common space shall be cleaned until the HVAC system has been evaluated and cleaned if necessary.
4. In the event that mold is observed in a residence during the pre-cleaning inspection, a follow-up inspection will be conducted by a mold expert to determine if the mold poses a health risk to residents or workers. If the presence of mold is determined to pose a health risk, the Monitoring Contractor may be required to mitigate the problem using specialized labor trained and experienced in mold remediation.
5. The Project Monitor shall schedule and oversee the cleaning operations of the Cleaning Contractor. *If DEP has determined that additional exterior clean up is required, no residential or common space or HVAC system shall be cleaned until the exterior of the building is cleaned. The Project Monitor shall coordinate daily access for cleaning and sampling with residents, owners, the Cleaning Contractor and sampling technicians.*
6. The Monitoring Contractor shall provide sufficient personnel to provide oversight of the Cleaning Contractor to verify that work is being conducted in accordance with the Cleaning Contract Scope of Work.
7. *The Project Monitor shall verify that the Cleaning Contractor is using certified workers.*
8. *The Project Monitor shall conduct routine quality assurance inspections during the course*

of cleaning and concur by initialing the Cleaning Checklist (to be developed) for tasks completed satisfactorily.

9. *The Project Monitor shall perform a final visual inspections upon completion of the cleaning. If all areas are not dust free then the Project Monitor will direct the Cleaning Contractor to reclean as necessary. If all areas are dust free then the Project Monitor will authorize final air sampling. Final inspections shall be documented using the Cleaning Checklist.*
10. The Project Monitor will conduct a post-cleaning inspection of the apartment with the resident at the completion of the sampling. The resident should inspect the apartment and identify any damage at this time and sign-off on the Project Completion Form. Any damage or loss to an apartment or its contents is to be documented on this form.
11. The Project Monitor will complete a daily report which documents cleaning starts, continuations completions, air sampling and any delays or difficulties encountered.
12. EPA will notify residents and owners of results of sampling conducted as part of this project. No other party is authorized to release residential or common area sampling results.
13. *Copies of all reports, Cleaning Checklist, Project Completion Forms and chain of custody forms shall be submitted daily to the USEPA OSC and DEP.*
14. ***Personal Air Monitoring***
Personal air monitoring shall be performed by the Monitoring Contractor in accordance with USDOL OSHA requirements. The person who conducts sampling shall possess a valid NYS DOL certificate. Personal air monitoring will be performed on a minimum of one worker per shift per apartment during for the first 4 - 6 weeks of cleaning operations. This may be extended based on an determination made by EPA, DEP and OSHA. Thereafter personal air monitoring samples will be taken at one sample per quadrant per day. All samples shall be collected and analyzed in accordance with NIOSH Method 7400 using PCM and TEM analysis. Analysis of these samples shall be the responsibility of the Monitoring Contractor. Results of analysis shall be available within 24 hours of collection. These results of this sampling shall be sent immediately to EPA, DEP, OSHA and the employer. The employer will make these results available to the employees or their designated representatives for their review in accordance with 29 CFR1910.1001 and 29 CFR 1926.58.
15. ***Air Sampling without cleaning***
 - a. Based on consultation with resident or owner, aggressive or modified aggressive air

sampling will be conducted. Residents shall not be present in their apartment during aggressive air sampling activities.

- i. Before beginning aggressive air sampling, forced air equipment (such as a 1 horsepower electric leaf blower) shall be used to direct exhaust air against walls, ceilings, floors and other surfaces. When directing the exhaust, caution shall be taken to minimize disturbance and potential damage to furnishings and personal belongings.
 - ii. For modified aggressive air sampling forced air equipment shall not be employed.
 - iii. All other procedures are identical for aggressive and modified aggressive air sampling.
- b. 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.
- c. For studio apartments 3 samples shall be collected. For 1-bedroom apartments and above 5 samples shall be collected. Sampling equipment shall be placed in living areas and away from obstructions. The sampling cassette must be placed on a tripod and not taped to existing surfaces.
- d. Common spaces will be sampled using modified aggressive techniques (20 inch fans). For small spaces, less than 260 linear feet and 160 square feet, 3 samples will be collected. For large spaces greater than 260 linear feet or 160 square feet and less than 25,000 square feet 5 samples will be collected. For spaces greater than 25,000 square feet, 1 sample will be collected for each 5,000 square feet. Sampling equipment shall be placed away from obstructions. The sampling cassette must be placed on a tripod and not taped to existing surfaces.
- e. Asbestos air samples shall be collected in accordance with the procedures specified in NIOSH Method 7400. Air sampling pumps will be operated at 10 liters per minute for eight (8) hours to achieve. To achieve minimum volume requirement of 4800 liters.
- f. Samples must be labeled and accompanied with completed chain of custody forms before shipping to the designated laboratory. The label must include the EPA Project Tracking Number. Samples will be packed, sealed and shipped to USEPA Contract Laboratory for analysis.
- g. All information must be maintained using the secure EPA website(url, user name and password to be provided by EPA). Dates for monitoring and/or cleaning shall be provided to EPA electronically in an EPA approved format within 24 hours. *Information on sampling activities (date, sample ID) will be provided to EPA, via the website, within 24 hours of completion of analysis.*

16. Pre-cleaning and Post-cleaning Wipe Sampling Procedures

- a. The Project Monitor will collect pre and post-cleanup wipe samples at 5 percent of the residences cleaned up to a maximum of 50 units per quadrant. This sampling will consist

of the collection of 3 pre clean-up and 3 post clean-up wipe samples for total metals and mercury (Note: a separate wipe sample is required for analysis for mercury). All wipe samples will be collected in accordance with procedures specified in HUD Appendix 13.1.

- b. Samples must be labeled and accompanied with completed chain of custody forms before shipping to the designated laboratory. The label must include the EPA Project Tracking Number. Samples will be packed, sealed and shipped to USEPA Contract Laboratory for analysis. Metals samples will be analyzed using EPA Method SW-846 6010B. Mercury samples will be analyzed using EPA Method SW-846 7471.

17. Post Clean-up Air Sampling Procedures

- a. Sampling shall not begin until a visual inspection confirms the absence of visible dust and debris. Post cleaning air sampling shall be completed within 24-hours of the completion of cleaning activities.
- b. All surfaces must be completely dry prior to the start of sampling.
- c. Window 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.
- d. Based on consultation with resident, aggressive or modified aggressive air sampling will be conducted upon completion of cleaning. Before the start of sampling, forced air equipment (such as a 1 horsepower electric leaf blower) may be used to direct exhaust air against walls, ceilings, floors and other surfaces. When directing the exhaust, caution shall be taken to minimize disturbance and potential damage to furnishings and personal belongings.
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Copies of all invoices for work conducted under this contract shall be provided to USEPA and DEP.

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 Monitor shall be responsible for accessing a secure EPA Website (url, user name and password to be provided by EPA). In coordination with the USEPA OSC, the Project Monitor will access residential services requested from the Website and schedule clean-up activities and air sampling with the tenants/owners, project monitors, asbestos abatement contractors and air monitoring technicians to the various apartments. The Project Monitor will then supply relevant information on activities back into the EPA Indoor Air database via the secure EPA website. *Data to be input may include but is not limited to start and completion dates for the cleaning, sampling dates and sample identification numbers.*

2. The Project Monitor will schedule and conduct pre-cleaning and pre-sampling inspections of the apartments, HVAC systems and common spaces. Residents will be provided with information regarding sampling options (aggressive and modified aggressive sampling protocols) and the handling of valuable personal items (money, jewelry , heirlooms) during work. The Project Monitor will obtain written access and authorization to clean the apartments, heating ventilation and air conditioning (HVAC) systems and common spaces using the USEPA Access Agreement (to be provided). The Project Monitor will advise EPA if any of following conditions are observed: mixed residential and commercial use within a building; dust and/or debris in common spaces; the presence of mold that may pose a hazard to residents or workers (guidelines to be provided); residents with special needs; or other circumstances that may require deviation from the procedures specified in Scope of Work. In consultation with EPA, the Project Monitor will make a determination of the appropriate Cleaning Contract Scope of Work (i.e. Scope A or B) to be employed. *This determination is to be made based the descriptions included in the Cleaning Contract Scope of Work and best professional judgement.*
3. The Monitoring contractor shall evaluate all HVAC systems in all buildings where cleaning will take place to determine if these systems have been impacted by dust or debris from the collapse of the World Trade Center and if these systems require cleaning. The Monitoring Contractor will clean impacted HVAC systems utilizing specialized labor trained and experienced in duct cleaning. No residential or common space shall be cleaned until the HVAC system has been evaluated and cleaned in necessary.
4. In the event that mold is observed in a residence during the pre-cleaning inspection, a follow-up inspection will be conducted by a mold expert to determine if the mold poses a health risk to residents or workers. If the presence of mold is determined to pose a health risk, the Monitoring Contractor may be required to mitigate the problem using specialized labor trained and experienced in mold remediation.
5. The Project Monitor shall schedule and oversee the cleaning operations of the Cleaning Contractor. *If DEP has determined that additional exterior clean up is required, no residential or common space or HVAC system shall be cleaned until the exterior of the building is cleaned. The Project Monitor shall coordinate daily access for cleaning and sampling with residents, owners, the Cleaning Contractor and sampling technicians.*
6. The Monitoring Contractor shall provide sufficient personnel to provide oversight of the Cleaning Contractor to verify that work is being conducted in accordance with the Cleaning Contact Scope of Work.
7. *The Project Monitor shall verify that the Cleaning Contractor is using certified workers.*
8. *The Project Monitor shall conduct routine quality assurance inspections during the course*

of cleaning and concur by initialing the Cleaning Checklist (to be developed) for tasks completed satisfactorily.

9. *The Project Monitor shall perform a final visual inspections upon completion of the cleaning. If all areas are not dust free then the Project Monitor will direct the Cleaning Contractor to reclean as necessary. If all areas are dust free then the Project Monitor will authorize final air sampling. Final inspections shall be documented using the Cleaning Checklist.*
10. The Project Monitor will conduct a post-cleaning inspection of the apartment with the resident at the completion of the sampling. The resident should inspect the apartment and identify any damage at this time and sign-off on the Project Completion Form. Any damage or loss to an apartment or its contents is to be documented on this form.
11. The Project Monitor will complete a daily report which documents cleaning starts, continuations completions, air sampling and any delays or difficulties encountered.
12. EPA will notify residents and owners of results of sampling conducted as part of this project. No other party is authorized to release residential or common area sampling results.
13. *Copies of all reports, Cleaning Checklist, Project Completion Forms and chain of custody forms shall be submitted daily to the USEPA OSC and DEP.*
14. ***Personal Air Monitoring***
Personal air monitoring shall be performed by the Monitoring Contractor in accordance with USDOL OSHA requirements. The person who conducts sampling shall possess a valid NYS DOL certificate. Personal air monitoring will be performed on a minimum of one worker per shift per apartment during for the first 4 - 6 weeks of cleaning operations. This may be extended based on an determination made by EPA, DEP and OSHA. Thereafter personal air monitoring samples will be taken at one sample per quadrant per day. All samples shall be collected and analyzed in accordance with NIOSH Method 7400 using PCM and TEM analysis. Analysis of these samples shall be the responsibility of the Monitoring Contractor. Results of analysis shall be available within 24 hours of collection. These results of this sampling shall be sent immediately to EPA, DEP, OSHA and the employer. The employer will make these results available to the employees or their designated representatives for their review in accordance with 29 CFR1910.1001 and 29 CFR 1926.58.
15. ***Air Sampling without cleaning***
 - a. Based on consultation with resident or owner, aggressive or modified aggressive air

sampling will be conducted. Residents shall not be present in their apartment during aggressive air sampling activities.

- i. Before beginning aggressive air sampling, forced air equipment (such as a 1 horsepower electric leafblower) shall be used to direct exhaust air against walls, ceilings, floors and other surfaces. When directing the exhaust, caution shall be taken to minimize disturbance and potential damage to furnishings and personal belongings.
 - ii. For modified aggressive air sampling forced air equipment shall not be employed.
 - iii. All other procedures are identical for aggressive and modified aggressive air sampling.
- b. 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.
- c. For studio apartments 3 samples shall be collected. For 1-bedroom apartments and above 5 samples shall be collected. Sampling equipment shall be placed in living areas and away from obstructions. The sampling cassette must be placed on a tripod and not taped to existing surfaces.
- d. Common spaces will be sampled using modified aggressive techniques (20 inch fans). For small spaces, less than 260 linear feet and 160 square feet, 3 samples will be collected. For large spaces greater than 260 linear feet or 160 square feet and less than 25,000 square feet 5 samples will be collected. For spaces greater than 25,000 square feet, 1 sample will be collected for each 5,000 square feet. Sampling equipment shall be placed away from obstructions. The sampling cassette must be placed on a tripod and not taped to existing surfaces.
- e. Asbestos air samples shall be collected in accordance with the procedures specified in NIOSH Method 7400. Air sampling pumps will be operated at 10 liters per minute for eight (8) hours to achieve. To achieve minimum volume requirement of 4800 liters.
- f. Samples must be labeled and accompanied with completed chain of custody forms before shipping to the designated laboratory. The label must include the EPA Project Tracking Number. Samples will be packed, sealed and shipped to USEPA Contract Laboratory for analysis.
- g. All information must be maintained using the secure EPA website(url, user name and password to be provided by EPA). Dates for monitoring and/or cleaning shall be provided to EPA electronically in an EPA approved format within 24 hours. *Information on sampling activities (date, sample ID) will be provided to EPA, via the website, within 24 hours of completion of analysis.*

16. Pre-cleaning and Post-cleaning Wipe Sampling Procedures

- a. The Project Monitor will collect pre and post-cleanup wipe samples at 5 percent of the residences cleaned up to a maximum of 50 units per quadrant. This sampling will consist

of the collection of 3 pre clean-up and 3 post clean-up wipe samples for total metals and mercury (Note: a separate wipe sample is required for analysis for mercury). All wipe samples will be collected in accordance with procedures specified in HUD Appendix 13.1.

- b. Samples must be labeled and accompanied with completed chain of custody forms before shipping to the designated laboratory. The label must include the EPA Project Tracking Number. Samples will be packed, sealed and shipped to USEPA Contract Laboratory for analysis. Metals samples will be analyzed using EPA Method SW-846 6010B. Mercury samples will be analyzed using EPA Method SW-846 7471.

17. Post Clean-up Air Sampling Procedures

- a. Sampling shall not begin until a visual inspection confirms the absence of visible dust and debris. Post cleaning air sampling shall be completed within 24-hours of the completion of cleaning activities.
- b. All surfaces must be completely dry prior to the start of sampling.
- c. Window 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.
- d. Based on consultation with resident, aggressive or modified aggressive air sampling will be conducted upon completion of cleaning. Before the start of sampling, forced air equipment (such as a 1 horsepower electric leaf blower) may be used to direct exhaust air against walls, ceilings, floors and other surfaces. When directing the exhaust, caution shall be taken to minimize disturbance and potential damage to furnishings and personal belongings.
- e. 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.
- f. For studio apartments 3 samples shall be collected. For 1-bedroom apartments and above 5 samples shall be collected. Sampling equipment shall be placed in living areas and away from obstructions. The sampling cassette must be placed on a tripod and not taped to existing surfaces.
- g. Common spaces will be sampled without the use of forced air devices (fans, leaf blowers etc). For small spaces, less than 260 linear feet and 160 square feet, 3 samples will be collected. For large spaces greater than 260 linear feet or 160 square feet and less than 25,000 square feet 5 samples will be collected. For spaces greater than 25,000 square feet, 1 sample will be collected for each 5,000 square feet. Sampling equipment shall be placed away from obstructions. The sampling cassette must be placed on a tripod and not taped to existing surfaces.
- h. Asbestos air samples shall be collected in accordance with the procedures specified in NIOSH Method 7400. Air sampling pumps will be operated at 10 liters per minute for eight (8) hours to achieve the maximum volume requirement of 4800 liters.

- i. Samples must be labeled and accompanied with completed chain of custody forms before shipping to the designated laboratory. The label must include the EPA Project Tracking Number. Samples will be packed, sealed and shipped to USEPA Contract Laboratory for analysis.
- j. All information must be maintained using the secure EPA website(url, user name and password to be provided by EPA). Dates for monitoring and/or cleaning shall be provided to EPA and DEP electronically in an EPA approved format within 24 hours. *Information on sampling activities (date, sample ID) will be provided to EPA, via the website, within 24 hours of completion of analysis.*