

Gilsenan, Michael

From: Barry.Benjamin@epamail.epa.gov
Sent: Thursday, August 15, 2002 5:02 PM
To: asg@agarchitect.com; BEinzig@aol.com; elliesilk@aol.com; Eric.Goldstein@nrdc.org; jennakilt@aol.com; nyeljp@justivce.com; kefreed@aol.com; flynnktm@aol.com; cpanyc@att.net; marilenaach@yahoo.com; maureensi@aol.com; pdillon@aol.com; paulwoodsbarlett@hotmail.com; smark@aaldef.org; s_jain@ix.netcom.com; uday@industrial_hygiene.com; uyu@aaldef.org; diane@specialR.com; sbtowers1@aol.com; WMAH@att.net; wcwnyc@bigfoot.com; info@fnyhc.com; paulm@tudorrealty.com; d.baumol@att.net; garyfagin@mindspring.com; info@cny.com; "mailto:bp"@manhattanbp.orgjudith8507; kaciducky@aol.com; lwatson@seiu32BJ.org; chitchcock@legal-aid.org; dharvey@tradewindsenvironmental.com; crinium@juno.com; lendra@1199.org; IBT804@aol.com; dkotelch@hunter.cuny.edu; Betty.Felton@NYSNA.org; lawdad1@aol.com; msiegel@cwa-union.org; lpeterson@msek.com; ploiy@eoysi.rutgers.edu; mclarke@hunter.cuny.edu; thurston@env.med.nyu.edu; PLK3@columbia.edu; steven.levin@mssm.edu; chilli@ldeo.columbia.edu; rps1@columbia.edu; brad.gair@fema.gov; joe.picciano@fema.gov; rcw1@cdc.gov; svr1@cdc.gov; david.ippolito@osha.gov; Tulis.Dana@epamail.epa.gov; asumowicz@cityhall.nyc.gov; lilan@cityhall.nyc.gov; dainac@dep.nyc.gov; avaltronir@dep.nyc.dep; michaelgi@dep.nyc.gov; sbenson@eom.nyc.gov; jleight@health.nyc.gov; jmiller@health.nyc.gov; Cxjohnso@gw.dec.state.ny.us; rjt03@health.state.ny.us; southardr@arcgny.org; ZeissM@usa.redcross.org
Subject: Scopes of Work



Monitoring_SOW.rtf



CLEANING_SOW.rtf

Attached please find the Scopes of Work for the World Trade Center Indoor Dust Cleaning Program. If you have any questions, please feel free to contact me.

Thank you,

Ben Barry
 United States Environmental Protection Agency
 290 Broadway
 26th Floor
 New York, NY 10007
 Phone: 212-637-3651
 Fax: 212-637-3561

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

ADDENDUM #2**World Trade Center Dust Cleaning Program
Monitoring Contract Scope of Work**

Note that exhaust systems such as bathroom and kitchen exhaust fans that directly remove room air to the outdoors are not included in this evaluation procedure. Components of direct exhaust systems typically include exhaust grilles, exhaust duct, exhaust fan, and rooftop or wall exhaust outlet devices. If information suggests that contamination of direct exhaust systems may be present, an evaluation may be performed using the same principles outlined for items 1, 2, and 3 above. Similarly, any ventilation equipment encountered that does not fall into any of these categories can be inspected using principles outlined in this section.

The locations within the ventilation system equipment expected to have the greatest impact from WTC-related dust include air intakes and intake ducts, intake air dampers, intake air filters and various system components located downstream of the intake air filters, depending on the system's filtration efficiency. Dust may collect at potential impingement points such as duct terminations, transitions and elbows, and interior system components such as control devices, dampers, thermal coils, turning vanes, fans, etc.

One factor that may be considered in performing the evaluation is whether or not the ventilation equipment operated during the WTC collapse and in the weeks immediately following the collapse. Equipment that was not operating due to power loss, or due to concerns about entrained dust may not have been impacted as heavily as equipment that operated throughout the collapse and immediate clean-up response.

Item 6.3 includes a listed of recommended equipment for performing the evaluation.

Item 6.4 includes a list of system components for each equipment category.

Item 6.5 includes the evaluation procedures that may be applied to each system component.

6.2 Documentation of Existing Mechanical Conditions

Prior to the start of the evaluation, the HVAC/Electrical Professional shall ensure that the ventilation system is cycled and that there are no obvious existing deficiencies affecting proper mechanical operation of the system for which the evaluation team may later be held responsible.

6.3 Recommended Supplies and Equipment

- Personal protective equipment (see 5.0)
- Sampling supplies (see 6.5.2.3)
- Disposal bags (see 6.5.2.3)
- Spray bottle containing soapy water
- Cleaning cloths
- Ladders (as needed)
- Lifts or scaffolding (as needed)
- Extension cords
- Hand tools (screw driver, pliers, etc.)

ADDENDUM #2

World Trade Center Dust Cleaning Program Monitoring Contract Scope of Work

- Rotary metal cutting saw
- For covering service openings, sheet metal plates, panels or access doors meeting NADCA 9705, NFPA 90A/90B and SMACNA specifications
- Telescoping inspection mirrors and flashlights
- Boroscope
- HEPA vacuum

6.4 Typical system components for each equipment category

The ventilation systems may contain, but may not necessarily be limited to combinations of the listed components in each category.

6.4.1 Ventilators, wall air conditioning units and window air conditioning units in common spaces

- Outside air intake louvers, grates and screens
- Outside air duct
- Outside air dampers
- Return air grille
- Return air plenum
- Filter rack
- Filter media
- Coils (evaporator)
- Blower assembly
- Condensate drain pan
- In-line electrical resistance strip heaters (in supply ducts connected to unit ventilators)
- Fire dampers
- Turning vanes
- Supply plenum or supply duct liner
- Supply air diffuser

6.4.2 Fan coil/heat pump units in common spaces

- Return grille
- Return air plenum
- Filter rack
- Filter media
- Blower assembly
- Thermal coils
- Supply plenum
- Supply diffusers

6.4.3 Central air system

ADDENDUM #2

World Trade Center Dust Cleaning Program Monitoring Contract Scope of Work

- Outside air intake louvers, grates and screens
- Outside air duct
- Outside air dampers
- Return air grilles
- Return air plenum
- Return air plenum damper
- Return air ducts
- Turning vanes
- Mixing chambers
- Filter rack
- Filter banks/media
- Pre-heat coils
- Cooling coils
- Re-heat coils
- Humidification and/or air cleaning equipment
- Fire dampers
- In-line re-heat coils
- Interior insulation
- Duct connectors
- Blower assembly including blower wheel, blower housing, air vanes, in-line noise attenuators, acoustical treatments (e.g., baffles, duct linings)
- Condensate drain pan
- Condensate accumulator
- Supply air plenum
- Supply air plenum damper
- Supply plenum or supply duct linings
- Supply air ducts (high and low pressure)
- Supply air diffusers
- Terminal boxes
- Open or ducted passive ventilation shafts

6.5 Evaluation Procedures

6.5.1 Accessibility

6.5.1.1 Locate System Components Accessible for Visual Inspection

The HVAC/Electrical Professional shall make an assessment of the accessibility of the various components of the system. For example, components may be enclosed within permanent sheet metal panels, or may be located above or behind solid plaster ceilings and walls.

ADDENDUM #2**World Trade Center Dust Cleaning Program
Monitoring Contract Scope of Work**

Determine the components that are accessible. At minimum, representative surfaces of the following system components should be inspected:

- air intake (outdoor or return)
- air intake dampers
- return air grilles
- return air plenum
 - horizontal surfaces
 - impingement points (e.g. turning vanes, elbows, transitions)
- filter racks and filter media
- blower
- thermal coils
- interior surfaces of the supply air ducts
 - horizontal surfaces
 - impingement points (e.g. turning vanes, elbows, transitions)
- volume dampers
- terminal boxes
- supply diffusers

Note that depending on the size and complexity of the HVAC system, access may require the use of ladders, lifts or scaffolds using appropriate methods of fall protection.

6.5.1.2 Methods of Access

The following list summarizes methods of accessing HVAC system components for inspection:

- through existing service openings (i.e., access doors and panels)
- by disassembly of housing
- by installation of service openings (may range from 1" diameter holes to access doors)

The HVAC/Electrical Professional shall assess the accessibility of each HVAC system component to be inspected. If an HVAC system component is not accessible, the Environmental Professional shall be consulted to determine whether installation of a service opening will likely disturb asbestos-containing materials. After such consultation, if approved by the Environmental Professional, the HVAC/Electrical Professional shall install service openings as needed to inspect the HVAC components listed in 6.5.1.1.

NOTE: Disassembly of housing and installation of service openings may only be performed by the HVAC/Electrical Professional and replacement plates, panels or access doors shall be installed in accordance with NFPA, NADCA and SMACNA standards and NYC building codes.

ADDENDUM #2

World Trade Center Dust Cleaning Program Monitoring Contract Scope of Work

The Environmental Professional shall repair or seal any interior/exterior duct insulation disturbed by the installation of service openings.

6.5.2 Methods of Evaluation

6.5.2.1 Visual Inspection Procedure

The HVAC/Electrical Professional and the Environmental Professional should jointly perform the visual inspection. At minimum, the components listed in 6.5.1.1 shall be inspected.

The visual inspection shall be accomplished using one or more of the following methods:

- direct examination
- telescoping inspection mirrors and flashlights inserted through service openings
- boroscopes inserted through supply air diffusers or other existing openings
- remotely operated video camera

6.5.2.2 Assessment of Conditions

Visual Assessment

All required interior surfaces in contact with the air stream shall be inspected for visible accumulations of dust and/or debris. Inspect all surfaces in contact with the air stream. Information indicates that some of the defining characteristics of WTC-related dust are that it contains extremely fine particles similar to talcum powder in consistency, is light-colored, contains pulverized concrete and/or gypsum wallboard, and may contain asbestos fibers. The visual inspection shall document:

- A general description of the appearance of interior surfaces of the various system components. The description for each component will include, but may not be limited to:
 - interior duct/fan housing surfaces are porous/non-porous
 - interior duct and fan housing surfaces are lined with insulation
 - interior duct and fan housing surfaces are double-walled (i.e. interior insulation with perforated metal cover)
 - filter loading, condition of filters and filter rack
 - interior surfaces are free/not free of visible dust and debris or suspect WTC-related dust and debris
 - description of dust color, level of dust loading that may include:
 - the depth of dust observed on each component (e.g., less than 1/16 inch, greater than or equal to 1/16 inch.).
 - the depth and location of dust on ducts and fan housing (i.e., on interior bottom, top and sides of ducts)
 - visually estimated percentage of surface area with suspect WTC-related dust

ADDENDUM #2

World Trade Center Dust Cleaning Program Monitoring Contract Scope of Work

- whether or not there are materials that are likely not associated with WTC-related dust such as building-related asbestos-containing materials, animal carcasses, delaminating lining material, visible mold growth, water damage, fecal matter, feathers or other evidence of animals, etc.

Historical Assessment

The evaluation team shall attempt to describe any other available information from site occupants or building managers, such as the known status of system operating conditions at the time of the WTC collapse, ventilation system maintenance (i.e., cleanings, filter changes, or replacement since the WTC collapse).

Based on these assessments, to the best of his/her ability the Environmental Professional will state a general impression of the overall cleanliness of each component, and whether or not it appears to be impacted by WTC-related dust.

6.5.2.3 Environmental Sampling Procedure

If the evaluation team determines that the ventilation equipment appears to have been impacted by WTC-related dust, cleaning will be recommended and environmental sampling will not be required. This information shall be included in the HVAC system evaluation report. The HVAC system evaluation report must be sent to EPA electronically in PDF format.

In the absence of environmental sampling that indicates otherwise, WTC-related dust shall be assumed to be an asbestos-containing material and cleaning procedures shall be performed in accordance with procedures for asbestos decontamination (see section 5.0).

If dust or debris is present and it is not apparent that it is related to the collapse of the WTC, a maximum of 5 bulk samples will be collected and analyzed for pH, fibrous glass and crystalline silica. These samples and copies of necessary documentation shall be shipped daily by courier for next day delivery to EMSL Analytical Inc., 107 Haddon Avenue, Westmont, NJ 08108 (Tel: 856-858-4800). This data will be used to determine if the sampled dust is from the collapse of the WTC. Dust will be considered WTC-related if: pH is 9 or above; fibrous glass content is between 30 and 40 % and crystalline silica content is 5% or greater. Laboratory data will be reported back to the Monitoring Contractor and shall be included in the HVAC system evaluation report. The HVAC system evaluation report must be sent to EPA electronically in PDF format.

Sampling Procedures

1. Sampling of interior dust may only be performed by the Environmental Professional.
2. Minimum personal protective equipment used by the Environmental Professional shall include a disposable protective coveralls, a P100 respirator, safety glasses, and disposable gloves.