NYC 9/11 Public Portal Document

Part I

Revised Work Plan for Abatement and Demolition of 133-135 Greenwich Street and 21-23 Thames Street

Prepared for:

The Greenwich Street Project, LLC
666 Fifth Avenue
New York, New York

Prepared by:

Airtek Environmental Corp.
39 West 38th Street
New York, NY 10018

212-768-0516

September 29, 2005

NYC-WTC_000134132

NYC 9/11 Public Portal Document

Table of Contents

1.0 General 3

2.0 Related Submittals 3

- 2.1 Environmental Community Air Monitoring Plan
- 2.2 Health & Safety Plan
- 2.3 Waste Management Plan
- 2.4 Quality Assurance Project Plan

3.0 Regulatory Submittals 4 ~~3~~

- 3.1 Asbestos Survey
- 3.2 Site Survey
- 3.3 NYC DEP Variance Application
- 3.4 NYSDOL Notification
- 3.5 USEPA Notification

4.0 Utilities – General 5 ~~4~~

5.0 Monitoring 5

6.0 Clearance Criteria 6 ~~5~~

7.0 Abatement Phase 7 ~~6~~

- 7.1 Part I: Exterior Cleaning
- 7.2 Part II: Soft Strip
- 7.3 Part III: In-Place ACM
- 7.4 Structural Framing/Masonry Façade

8.0 Conventional Building Demolition 8

- 8.1 Permits
- 8.2 Dust Suppression
- 8.3 Site Protection
- 8.4 Waste Management – Conventional Demolition
- 8.5 Site Work

Attachment I: Variance Application
Attachment II: Mechanical Controls

NYC-WTC_000134133

NYC 9/11 Public Portal Document

1.0 General

The Copper Group, Inc. (Owner) has engaged Airtek Environmental Corp. (Airtek) to prepare the following project plan in support of the de-construction of the buildings located at 133-135 Greenwich Street and 21-23 Thames Street, New York, NY. This plan is in response to a request by the WTC Regulators for a documented approach to the project.

Though they sustained little physical damage, the buildings at 133-135 Greenwich Street and 21-23 Thames Street were impacted by fallout from the events of September 11, 2001. It is the Owner's intent to conduct abatement of in-place asbestos, and to effect a decontamination of the interior of the building so that conventional demolition activities can be completed.

2.0 Related Submittals

2.1 Community Air Monitoring Plan

Prior to initiation of any decontamination/deconstruction operations, an Environmental Community Air Monitoring Plan (ECAMP) developed by an Airtek CIH, and approved by the USEPA will be established and operational. The Program will consist of daily air monitoring at three points on the perimeter of the project site. Monitoring will be conducted in accordance with the attached Environmental Air Monitoring Specification, Community Monitoring will continue until building demolition is complete. The ECAMP is included as Part II of the submittal Package.

2.2 Health & Safety Plan

A Certified Industrial Hygienist (CIH) from Airtek has developed a site-specific HASP to be applied to all site decontamination operations. The HASP details requirements for access/egress and requirements for Personal Protective Equipment for workers at the site. The HASP is included as Part III of the submittal package.

2.3 Waste Management Plan

A Certified Industrial Hygienist (CIH) from Airtek has developed a site-specific Waste Management Plan (WMP) to be applied to all waste operations for the site. The WMP provides details on how, and by whom, waste determinations and categorizations will be made, and provides detail on sampling and analysis protocols. The WMP is included as Part IV of the submittal package.

2.4 Quality Assurance Project Plan (QAPP)

NYC-WTC_000134134

NYC 9/11 Public Portal Document

In support of the project, a QAPP has been prepared to provide quality assurance procedures and guidelines for the environmental air sampling and waste sampling that will support the project. This QAPP is included as Part V of the submittal.

3.0 Environmental Regulatory Submittals

3.1 Asbestos Survey

Airtek has undertaken an asbestos survey intended to coordinate and complete previous survey work that has been conducted at the site. All previous documentation was reviewed and a site survey and bulk sampling were conducted. Based on this survey work, an inventory of in-place asbestos has been developed. The results of the surveys are included in Attachment I "Variance Application" to this Work Plan.

3.2 Site Survey

A thorough inspection of the subject structures and the adjacent structures has been conducted. Communicating openings, air intakes, and other potential pathways of contamination have been identified for inclusion in the decontamination design. Facility managers for the adjacent structures have been contacted so that engineering controls may be implemented to protect occupants. Of particular concern are air intakes of the school building directly to the east of the project site. These concerns are being addressed cooperatively with the Department of Education. Details on these plans are included in Attachment II "Mechanical Controls" to this work plan.

3.3 NYC DEP Variance Application

In order to execute the particular requirements of this unique project, specific relief from RCNY Title 15 will be requested by the submittal to NYC DEP of an ACP-7 form with an accompanying ACP-8 Request for Variance form for each of the two structures involved in the project. Variances to be requested will be specific to the conditions in each building. A copy of the variance request for each building is included in Attachment I "Variance Application."

3.4 NYS DOL Notification

Due the fact that the decontamination will constitute a 'Large Project" according to Industrial Code Rule #56, notification of the project will be made to the NYS Department of Labor. A copy of the DOSH-486 form is included in Attachment I.

3.5 USEPA Notification

Due the fact that the decontamination will constitute a 'Large Project" according to EPA NESHAP, notification of the project will be made to the USEPA. A copy

NYC-WTC_000134135

NYC 9/11 Public Portal Document

of the USEPA notification is attached. In addition, if it is determine that greater than 100 kg of Hazardous Waste is to be generated in any one month from this site, RCRA notification will be required.

4.0 Utilities - General:

Utility service is currently cut off to the building. All electricity and water required for the work will be drawn from sources outside the building.

5.0 Monitoring:

Community Monitoring will be conducted as detailed in submittal Part II – ECAMP.

Project Monitoring: Throughout the decontamination activities, project air monitoring will be conducted in addition to the Community Monitoring described above. Project Monitoring will be conducted in strict accordance with RCNY Title 15 Chapter 1, Section 1-41 to 1-45 and the provisions set forth in the Variance Application. All sample analyses will be by TEM. Project monitoring is detailed in submittal Part II - ECAMP.

Clearance Testing will be conducted as detailed in the "Clearance Criteria" section below, and as detailed in submittal Part II – ECAMP.

6.0 Clearance Criteria:

The site will be considered ready for the Conventional Building Demolition Phase when the buildings are visually clean of all dust, all interior surfaces have been encapsulated with a colored encapsulant, and when interior air clearance testing indicates that concentrations of the analytes listed below have been reduced to levels specified below. All visual clearance and air testing will be conducted by the environmental consultant. Where necessary a "White Glove Test" will be performed to determine visual clearance.

The buildings can be removed from containment and the abatement phase will be completed when area air measurements, performed using aggressive air sampling procedures which re-suspend residual settled dusts, are at or below each of the following airborne concentrations in every sample, respectively for the metals noted below and for asbestos. Air testing for asbestos shall be in accordance with applicable regulations and applicable permits and variances for this project. If any one sample is above any of these limits, then the abatement phase will be considered incomplete, and the effected areas shall be re-cleaned and re-tested until the airborne concentrations are at or below the levels noted for metals and asbestos.

Clearance testing for asbestos will be conducted by floor, and will be acceptable when all samples for a given floor area meet the 70 structures per square millimeter TEM standard. Clearance testing for metals will be acceptable when all samples meet the following criteria:

NYC-WTC_000134136

NYC 9/11 Public Portal Document

Antimony	250 ug/m3
Barium	250 ug/m3
Beryllium	1.0 ug/m3
Cadmium	5.0 ug/m3
Chromium (III)	250 ug/m3
Copper	500 ug/m3
Lead	25 ug/m3
Manganese	100 ug/m3
Mercury	12.5 ug/m3
Nickel	50 ug/m3
Zinc	1,000 ug/m3

5 inside work area (IWA) samples will be collected from each floor. 5 outside work area (OWA) for ACM will be collected from areas outside each floor (roof, exterior, etc.) of the subject buildings. In addition, 5 IWA samples for metals will be collected from each floor. All samples will be collected using aggressive sampling techniques in compliance with Title 15 clearance sampling criteria. All clearance samples will be run on all floors simultaneously. Details on sampling methodologies are included in the ECAMP document (submittal Part II).

7.0 Abatement Phase

7.1 Part I - Exterior Cleaning:

The exterior of the building was decontaminated as a part of the NYC DEP Building Exterior Cleaning Program following 9/11/01. Airtek's visual inspection of the façade indicates that it is advisable to conduct low-pressure power washing prior to initializing demolition activities. The exterior of the building will be cleaned in accordance with the NYC DEP WTC Dust/Residue Roof & Façade Cleaning Procedures included in Attachment I.

Building façade clean-up via low pressure washing:

1. At grade level, a work place/restricted area shall be established. This area shall be plasticized with one (1) layer of 6-mil plastic from one (1) foot up the building exterior wall to the edge of the sidewalk, rear easement and out to the building line. Wood shall be placed under the plastic to create a large catch basin for the water run-off. It shall be cordoned off with clearly identifiable asbestos hazard tape.

2. A low pressure washing technique, moving from top to bottom, shall be employed to minimize water bounce-back. A boomlift will be used for the wash-down. The façade and roof shall be washed with a low-pressure wash not to exceed 250 psi.

NYC-WTC_000134137

NYC 9/11 Public Portal Document

3. The collected water run-off shall be pumped to 55-gallon drums. Aliquots from each drum of wash water will be collected. The aliquots will be composited to be analyzed for Full TCLP and RCRA characteristics. In addition, any testing required by NYC DEP sewer discharge requirements will be conducted. If the water is not regulated under RCRA, and meets the criteria set forth by NYC DEP, it will be filtered through a 5 micron filter prior to disposal to the NYC sewer system per NYC Title 15, Part 1-82 (b) 1. If testing indicates the water is regulated under RCRA, it will be handled, package, stored and disposed in strict accordance with its categorization.

7.2 Part II - Soft Strip:

The Soft-Strip will be conducted in negative air full-containment as an asbestos project according to the asbestos rules and NYC DEP Variance for the project. Each building will be contained as one work area. Stairwells will not be contained and/or cleared separately. As noted in Section 6.0 "Clearance Criteria," each building will have its clearance samples run simultaneously. Dust suppression will be conducted according to the stringent rules and regulations governing asbestos projects. Exterior isolation barriers will be installed per the NYC DEP Variance.

All interior materials, including moveable objects, will be subject to abatement and removal, and will be bagged and disposed of as ACM waste at a minimum. Certain stainless steel kitchen fixtures and other impermeable materials may be decontaminated by HEPA-vacuum and wet wiping. Efficacy of this decontamination will be determined by the Environmental Consultant as described in the Waste Management Plan (Submittal Part IV). All ceiling systems (plaster, tiles, sheetrock, etc.), wall systems (plaster, wall board, etc.), and floor systems, (tiles, carpet, etc.) will be removed and bagged for disposal as ACM waste at a minimum. Waste characterization testing as described in the WMP (submittal Part IV) will be used to make final waste determinations. Remaining structural members will be wet-wiped, HEPA vacuumed, and encapsulated with a penetrating encapsulant. All interstitial spaces (i.e., chases, stud walls, etc.) will be accessed, wet-wiped, HEPA-vacuumed, and encapsulated. Operable windows will be articulated, wet wiped, HEPA-vacuumed, and encapsulated.

7.3 Part III - In Place ACM:

In-place ACM has been identified as follows:

133-135 Greenwich Street:

a. Roof Flashing – 35sf
b. Bulkhead Tar – 10sf

NYC-WTC_000134138

NYC 9/11 Public Portal Document

21-23 Thames Street:

Main Roof:

a. Roof Membrane – 350 sf
b. Flashing – 150 sf
c. Tar – 25 sf
d. Coping Stone Caulk – 1 sf

1st Floor Roof:

a. Roof Membrane – 100 sf
b. Roof Flashing – 46 sf

Façade:

a. Window Caulk – 10 sf

Interior:

a. Pipe Insulation – 57 lf

Per the requirements of the NYCDEP, these materials will be abated last in the decontamination sequence. As such, care will be taken to protect these materials from disturbance and/or damage during the soft-strip phase. Pipe insulation will be removed by NYC DEP Glovebag Procedures. For detailed information on the asbestos survey conducted, please refer to the Airtek Asbestos Survey Reports dated May 31, 2005 (Attachment I).

Following 2nd and 3rd cleanings and the settling periods, final air testing will be conducted as detailed in "Clearance Criteria" above. Upon successful clearance air testing, the building will be turned over to the demolition contractor for conventional demolition.

7.4 Structural Framing/Masonry Façade

Due to the impossibility of removing structural framing without the risk of building collapse, all structural framing, and exposed masonry façade will be wet-wiped, HEPA vacuumed, and encapsulated with penetrating encapsulant. Prior to commencement of conventional demolition, the remaining building components (anticipated to be principally wood framing and masonry façade) will be tested by the Environmental Consultant for ACM content and RCRA characteristics, as noted in the WMP (Part IV of the submittal). These materials will be handled and disposed of as appropriate based on the test results.

8.0 Conventional Building Demolition:

8.1 Permits:

NYC-WTC_000134139

NYC 9/11 Public Portal Document

Contractor will obtain all governmental permits necessary to perform the work including, but not limited to sidewalk bridges, D.O.T., etc.

Contractor will comply with requirements of all city, state or federal agencies (including OSHA) relating to the demolition work.

8.2 Dust Suppression:

The Contractor will be responsible to take precautions to prevent fugitive dust from escaping the site. As noted in the Project HASP, the Contractor has the responsibility to monitor for visible emissions. Dust suppression engineering controls will be the responsibility of the Contractor, and may include, but not be limited to the following:

Wet suppression: The use of water and/or amended water
Site housekeeping via vacuuming/sweeping
Limitation of free-fall of demolition debris
Limitation of freefall during waste loading
Sealed and/or covered transport

The listed controls are intended as a guideline. It is the responsibility of the Contractor to implement whatever engineering control is required (whether above-listed or not) to prevent fugitive dust.

Failure to suppress dust that results in visible fugitive emissions from the site will result in a work stoppage. Work will not be re-started until adequate corrective measures have been implemented to the satisfaction of the Site Hygienist. The procedures to be followed with regards to visible emissions are specified in the ECAMP (Part II of the Submittal).

8.3 Site Protection:

A sidewalk bridge exists along Greenwich and Thames Streets and will remain in place for the duration of Contractor's work. The sidewalk bridges have been installed and arc maintained by the LMDC, not the owner of the site. Contractor is responsible to protect the sidewalk bridge during demolition. In the event a portion or section of the bridge needs to be removed and/or relocated, contractor will coordinate this work with the bridge owner (LMDC or Owner).

The Contractor will be responsible for all temporary protection to any adjacent buildings and/or lots. Contractor will include roof top protection, sidewalk bridges as required to perform this work.

Contractor will maintain the project site, adjacent sidewalks and streets free from debris and garbage, including daily sweeping of sidewalks for the duration of contractor's work.

NYC-WTC_000134140

NYC 9/11 Public Portal Document

Contractor will provide and maintain a plywood fence along Greenwich and Thames Streets with gates along the front and side of the property. All work to be coordinated with NYC DOB temporary fence permit. Upon completion of the Contractor's work, the fence and gates will be left in an acceptable condition, with gates in locations approved by, and coordinated with, the General Contractor. General Contractor will obtain fence permit(s) and maintain permit(s) for the duration of the project. Fence will comply with NYC Department of Building requirements and will be constructed of minimum 5/8" exterior grade plywood on two by four frames. Fence will be painted Dark Blue and will have "Post No Bills" painted a maximum of 10 feet on center. Fence will be constructed with wood or metal posts at regular intervals. Post will be sunk into the ground as required to make them free standing without bracing or outriggers. Fence will be constructed such that sections of it are easily removable without disturbing remaining sections. Blind spots will not be created on sidewalk.

8.4 Waste Management – Conventional Demolition:

Conventional demolition will involve only the remaining wood structure and masonry exterior of the buildings. As detailed in the WMP (submittal Part IV), representative waste will be collected by the Environmental Consultant for analysis by Full TCLP and RCRA characteristics. Based on the results of TCLP testing, the waste will be characterized according to any RCRA exceedances. Disposal will be only to facilities licensed to accept the waste so characterized.

Transportation and Disposal will be as described in Part IV of the Submittal, "Waste Management Plan" Sections 9, 10 & 11. Records of hazardous waste determinations and hazardous waste manifests will be retained for a period of at least three years from the completion of the project.

8.5 Site Work:

Contractor will perform proper dust control during any demolition or removal work. The procedures to be followed with regards to visible emissions are specified in the ECAMP.

The Contractor will comply with all federal and local laws regarding noise control.

All work will be done by appropriately qualified labor. The Contractor will be responsible for employing qualified tradesmen for the duration of Contractor's contract work on this project.

All work is to be performed in accordance with the latest standards as established by OSHA.

NYC-WTC_000134141

NYC 9/11 Public Portal Document

Demolition of a 2-story brick structure, and 5-story brick structure:

a. All existing interior garbage, furniture, fixtures, equipment and surfacing materials (plaster/wallboard/ceiling systems, etc.) will have been removed under Section 7.0 above.
b. The Owner's Engineer has determined that the party wall between 133-135 Greenwich Street and the brick building to the north (130 Cedar Street) will be removed.
c. Complete demolition of above grade structures and ground level framing. Existing foundation wall, vaults and sidewalk will remain.
d. Remaining exposed cellar slab will be left free from demolition debris.
e. All utilities serving the buildings have been disconnected.
f. Obtain and secure all required permits to complete demolition work, including but not limited to demolition permit, fence permit, sidewalk closing permit, etc. Cost for obtaining permits is the responsibility of this trade contractor.
g. Upon completion of demolition work, demolition contractor will provide a "berm" along the foundation walls around the perimeter of the site. The berm will be used to temporarily support the foundation walls until the excavation / foundation contractor starts work. The berm will be set on a 45 degree angle and start from the top of existing foundation wall to the cellar slab,

End

NYC-WTC_000134142

NYC 9/11 Public Portal Document

ATTACHMENT I

NYC-WTC_000134143

NYC 9/11 Public Portal Document

AIRTEK ENVIRONMENTAL CORP.

39 WEST 38TH STREET, 12TH FLOOR, NEW YORK, NY 10018
PHONE (212) 768-0516 FAX (212) 768-0759
WWW.AIRTEKENV.COM

September 23, 2005

Mr. Rajappan Radhakrishnan, Director
New York City Department of Environmental Protection
Bureau of Air, Noise and Hazardous Materials
59-17 Junction Blvd., 8th Floor
Jamaica, NY 11373

Re: Variance Request – 133-135 Greenwich Street
Building Decontamination and De-construction

Dear Mr. Radhakrishnan:

The Copper Group, Inc. has engaged Airtek Environmental Corp. (Airtek) to prepare the following Variance Request in support of the decontamination and de-construction of the building located at 133-135 Greenwich Street, New York, NY.

Though it sustained little physical damage, the building at 133-135 Greenwich Street was impacted in places by fallout from the events of September 11, 2001. It is the Owner's intent to conduct abatement of in-place asbestos, and to effect a decontamination of the interior of the building so that conventional demolition activities can be completed.

Asbestos Survey:

Airtek has undertaken an asbestos survey intended to coordinate and complete previous survey work that has been conducted at the site. All previous documentation was reviewed and a site survey and bulk sampling was conducted. Based on this survey work, an inventory of in-place asbestos has been developed. The results of this survey are attached.

Health & Safety Plan:

A Certified Industrial Hygienist (CIH) from Airtek has developed a site-specific HASP to be applied to all site decontamination operations. The HASP details requirements for access/egress and requirements for Personal Protective Equipment for workers at the site. The HASP is attached.

NYC DEP Variance Application:

In order to execute the particular requirements of this unique project, specific relief from RCNY Title 15 is requested as follows:

NYC-WTC_000134144

NYC 9/11 Public Portal Document

Exterior:

We are requesting a variance from the following subsections to facilitate the decontamination of the facade:

Section 1-81(j)	No pre-cleaning of the work area(s)
Section 1-81(m)	Partial plasticization of the work area(s)
Section 1-82(a) & 1-83(a)	Remote decontamination facilities
Section 1-91	No negative air
Section 1-112(d) & 1-112(e)	No 1st & 2nd settling period and no 2nd & 3rd cleaning

The exterior of the building was decontaminated as a part of the NYC DEP Building Exterior Cleaning Program following 9/11/01. Airtek's visual inspection of the façade and roof indicates that it is advisable to conduct low-pressure power washing prior to initialing demolition activities. The exterior of the building will be cleaned in accordance with the NYC DEP WTC Dust/Residue Roof & Façade Cleaning Procedures. and the procedures ---.

Interior:

Phase 1 – Soft Strip:

We are requesting a variance from the following subsections:

Section 1-125(i) Isolation Barriers

We request relief from 1-125(i): Isolation Barriers. It is the intent of the project to seal all windows and communicating openings to the outside of the building from the outside with two layers of 6-mil poly and plywood barriers. The intent of this action is to create a sealed structure that will allow decontamination activities within the building while reducing the possibility of migration of dust to the outside of the structure.

All interior materials, including moveable objects, will be subject to decontamination and removal or, if porous, will be bagged and disposed of as ACM waste at a minimum. Additional waste characterization will be conducted per Part IV Waste Management Plan. All ceiling systems (plaster, tiles, sheetrock, etc.), wall systems (plaster, wall board, etc.), and floor systems, (tiles, carpet, etc.) will be removed and bagged for disposal as ACM waste at a minimum. Remaining structural members, pipes, boiler, freezer boxes and roof mounted HVAC units will be wet-wiped, HEPA vacuumed, and encapsulated with a penetrating encapsulant. All interstitial spaces will be wet-wiped, HEPA-vacuumed, and encapsulated. Operable windows will be articulated, wet wiped, HEPA-vacuumed, and encapsulated. Full worker and waste decontamination facilities will be attached to the entrance on Thames Street. The decontamination facilities will comply with NYC DEP Title 15 §1-82 & §1-83.

Phase II - In Place Exterior ACM:

We are requesting a variance from the following subsections for the roofing materials:

Section 1-41(c)	During abatement air sampling inside the work area
Section 1-41(d)	No post abatement clearance air monitoring
Section 1-102(b)	Not to fully saturate ACRM with amended water

We proposed to use Attachment FR - Procedures for use of Foam or Similar Viscous Liquid in Removal of Asbestos Containing Roofing (ACRM) in New York City. In addition to the conditions set forth in Attachment FR Section E-6 arrangements have been made to seal openings at High School of Economics & Finance – Refer to Work Plan for details.

In-place ACM has been identified as follows:

NYC 9/11 Public Portal Document

1. Bulkhead Tar – 10 sf
2. Roof Flashing – 35 sf

These materials will be abated last in the decontamination sequence. For detailed information on the asbestos survey conducted, please refer to the Airtek Asbestos Survey Report dated May 31, 2005 (Attached).

Utilities - General:

Utility service is currently cut off to the building. All electricity and water required for the work will be drawn from sources outside the building.

Project Monitoring:

Project Monitoring: Throughout the decontamination activities, project air monitoring will be conducted in addition to the Perimeter Monitoring described above. Project Monitoring will be conducted in strict accordance with RCNY Title 15 Chapter 1, Section 1-41 to 1-45 and approved variance application. All sample analyses will be by TEM.

Clearance Testing: Aggressive area clearance testing for asbestos will be conducted for all work areas by TEM.

Clearance Criteria:

Clearance testing for asbestos will be acceptable when all samples for a given work area meet the 70 structures per square millimeter TEM standard. Additional clearance sampling shall be performed as specified in the work plan.

Thank you for your time and consideration,

Sincerely,

Michael Porter

Michael Porter
Senior Project Manager

MP:mtf

7624206030

NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION

Asbestos Control Program
59-17 Junction Boulevard, 6th Floor, Flushing, NY 11373-5108

ONLY TYPEWRITTEN FORMS WILL BE ACCEPTED

DEP

ASBESTOS PROJECT NOTIFICATION
(ASBESTOS INSPECTION REPORT)

Building Dept. or DEP Use For official use only

When submitting this form at the NYC Department of Buildings, the original form and three (3) copies with original signatures are required. Submittal at the NYCDEP requires one copy of the form with original signatures. This form must be submitted to the NYC DEP not less than one week in advance of the start of abatement activities.

1. $1200 (See fee schedule)

I. FACILITY

2. Address 133 (Premise #) Greenwich Street (Street Name) Borough Manhattan Zip 10006

AKA 25-29 Thames Street 3. Block 52 4. Lot 8

5. Type of Facility Commercial 6. Name of Building

II. BUILDING OWNER

7. Name Greenwich Street Project, LLC. 8. Contact Person Chanan Rozenbaum

9. Tel. # (347) 643-9960 Fax # (212) 208-4614

10. Address 666 Fifth Avenue City New York State NY Zip 10103

III. GENERAL CONTRACTOR

11. Name Tel. #

IV. ASBESTOS ABATEMENT CONTRACTOR

12. Name Hazardous Elimination Corp. 13. Contact Person Ernie Carransa

14. Federal Employer ID. # PII 15. Tel. # (631) 752-2898 Fax # (631) 752-2910

16. Address 195 H Central Avenue City Farmingdale State NY Zip 11735

V. THIRD PARTY AIR MONITOR

17. Name Airtek Environmental Corp. 18. Contact Person Benn Lewis

19. Federal Employer ID. # PII 20. Tel. # (212) 768-0516 Fax # (212) 768-0759

21. Address 39 West 38th Street City New York State NY Zip 10018

22. Sample Analysis Laboratory Airtek / ATC Associates 23. NYS DOH ELAP # 11040/10879

VI. PROJECT INFORMATION

24. Starting date for this portion of work Projected completion date

Asbestos work schedule: ☑ Monday ☑ Tuesday ☑ Wednesday ☑ Thursday ☑ Friday ☑ Saturday ☑ Sunday

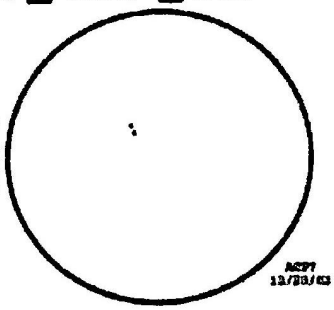
Shift From: ☐ am ☐ pm to ☐ am ☐ pm

If other, specify

Access to inspect the premises must be provided during the work schedule indicated in this item.

28. Total amount of asbestos-containing material to be abated during this work

42,423 Square Feet, and/or 0 Linear Feet



NCPT 11/30/03

NYC 9/11 Public Portal Document

6426206039 **ASBESTOS INSPECTION REPORT (continued)**

26. Asbestos Hauler DJM Co. Inc. NYS DEC Permit # RJ-344 Tel.# (973) 491-0006

Disposal Site(s) Meadowfill Landfill, Bridgeport WV & Cumberland Landfill Shippberg, PA

27. This asbestos abatement is part of a (Item a through e requires filing of this form with the NYC Department of Buildings)

a) ☑ Demolition b) ☐ Boiler Replacement c) ☐ Sprinkler Replacement d) ☐ Renovation/Alteration

e) ☐ Fireproofing Replacement f) ☑ Other (Describe) Asbestos Abatement/WTC Dust Remediation

28. TYPE OF ABATEMENT (Check all appropriate boxes)

☑ Removal ☐ Enclosure ☐ Encapsulation ☐ Repair ☐ Clean up

29. ABATEMENT PROCEDURE (Check all appropriate boxes)

☑ Full Containment ☐ Glovebag ☐ Tent ☑ DEP Variance Application

30.LOCATIONS OF ABATEMENT

Floor(s)	SECTION OF FLOOR (e.g. entire east wing, room #, boiler room, lobby, etc.)	AFFECTED SURFACES CONTAINING ACM (e.g. Pipe lagging, ceiling, plenum ducts, storage tanks, caulking, etc.)	AMOUNT OF ACM SQUARE FEET	AMOUNT OF ACM LINEAR FEET	DESCRIPTION OF WORK BEING PERFORMED (e.g. running cable, installing fire sprinkler, removing and reinstalling ductwork, etc.)
Bsmt	Entire	WTC Dust	12,000		Sub-Chapter G
1	Entire	WTC Dust	12,000		Sub-Chapter G
2	Entire	WTC Dust	12,000		Sub-Chapter G
Roof	Entire	Flashing	35		Asbestos Abatement
Roof	Bulkhead	Tar	10		Asbestos Abatement
B-2, R	Facade	WTC Dust	6,378		WTC "Bldg Ext. Cleanup"
↓	Roof	WTC Dust	?		>?

Additional pages attached ☐

31. I hereby declare that the information provided herein is true and complete to the best of my knowledge. I am familiar with Federal, State and NYC laws and regulations applicable to asbestos related work.

Airtek Environmental	Hazardous Elimination	Airtek Environmental
Print Name of Air Monitor	Print Name of Asbestos Contractor	Print Name of Applicant
Signature	Signature	Signature
Date	Date	Date

32. I understand that as the owner of a building where asbestos abatement activity occurs, I am responsible for the performance of the asbestos abatement activities in accordance with the Asbestos Control Program Rules. I have contracted the third party air monitor who is completely independent of all parties involved in the asbestos project. I hereby declare that I have authorized the filing of this notification for the work specified herein.

Greenwich Street Project, LLC. _____ _____

Print Name of Owner Signature Date

A STAMPED COPY OF THIS FORM INCLUDING AMENDMENTS MUST BE AVAILABLE AT THE WORK SITE.

Any modification of information provided on this form must be reported immediately in writing directly to the NYC DEP ACP.

The requirements of the Asbestos Control Program Rules may not be lawfully avoided or lessened through the performance of work in incremental or piecemeal fashion.

NYC-WTC_000134148

NYC 9/11 Public Portal Document

NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
Asbestos Control Program
59-17 Junction Boulevard, 8th Floor, Corona, NY 11368-5107

Asbestos Variance Application

ONLY TYPEWRITTEN FORMS WILL BE ACCEPTED

FOR OFFICIAL USE ONLY
Variance #_____
Fee Paid _____
Notification #_____

I. FACILITY

Address 133-135 Greenwich Street Borough Manhattan Zip 10006

Application must be made at least 2 weeks prior to the start of work.

II. APPLICANT

Name Airtek Environmental Corp. Tel # (212) 768-0516

Address 39 West 38th Street City New York State NY Zip 10018

Capacity: ☐ Contractor ☑ Consultant ☐ Owner ☐ Other_____ Contact Person Benn Lewis

III. SPECIFY ALL NYC DEP OR NYS DOL (ICR56) ASBESTOS RULE PROVISIONS FROM WHICH A VARIANCE IS REQUESTED

~~1-41 (c), 1-41(d), 1-81(j), 1-81(m), 1-93(b)2, 1-91, 1-102(b), 1-112(d), 1-112(e), 1-125(f)~~

SPECIFY FLOORS AND/OR AREAS WHERE WORK INVOLVING THIS VARIANCE IS TO OCCUR

~~Basement, 1st, 2nd & Roof~~

REASONS FOR REQUEST AND DESCRIPTION FOR PROPOSED ACTION (Attachment(s) shall be submitted in TRIPLICATE)

Explain why the procedures required by Title 15, Chapter 1 of the Rules of the City of New York (RCNY) and/or Part 56 of Title 12 of New York Codes, Rules and Regulations (Subparts 56-4 through 56-17) cannot be used. (Attach Additional Sheets)

State the alternative procedures that will be employed to satisfy each requirement as modified. (Attach Additional Sheets)

Provide color coded drawings identifying work area(s) and location of decontamination enclosure system(s).

IV. FEE SCHEDULE

Amount of ACM affected by this variance: 42,423 square feet + _____ linear feet = Total Amount of ACM 42,423 feet

	If total amount of ACM is less than 5000 feet:	If total amount of ACM is 5000 feet or more:
Seven day notification period waiver	$300	$400
First sub-section (per category)	$400	$600
Each additional sub-section (per category)	$200	$300
Maximum fee	$1200	$1800

See Section 1-03(e) of the NYCDEP Asbestos Rules for category definitions.

Enter applicable fee based on schedule above Total Fees $_____

V. I hereby declare that the information provided herein and in any and all accompanying attachments is true and complete to the best of my knowledge. I understand that failure to comply with conditions set forth by the Department in an approval of the application shall render this variance null and void.

Greenwich Street Project, LLC.
Print Name of Owner

Airtek Environmental Corp.
Print Name of Applicant (if not owner)

_____ Signature of Owner Date

_____ Signature of Applicant Date

Work involving a variance may not commence prior to the receipt of the Department's approval of the application. Any violation of the terms of any variance issued pursuant to Title 15, Chapter 1 of the RCNY Section 1-03 is considered a violation of the lettered subdivision modified by the variance.

ACP9
2/2001

NYC-WTC_000134149

NYC 9/11 Public Portal Document

A. TYPE OF NOTIFICATION

Check only one type of notification below.

- [x] Initial _____ Complete all sections and submit 10 calendar days prior to starting date.
- [ ] Amended _____ Submit amended notification with all sections completed and amended item(s) circled.
- [ ] Cancelled _____ Complete Section G and attach copy of initial notification or complete all sections.
- [ ] Emergency _____ You must first call the Program Manager's office of the Asbestos Control Bureau at 718-457-1255 for prior approval of emergency status, then complete and return this form including:

Date (___/___/___) Time (_____) Emergency Status Granted

Authorized by: _____ (From Asbestos Control Bureau)

B. CONTRACTOR INFORMATION

Provide all information requested below.

1. FEIN: PII

2. Asbestos Lic. No. 99 - 0148

3. Contractor Name and Address
Hazardous Elimination Corp
195H Central Avenue
Farmingdale, New York 11735

4. Mailing Address *(if different)*
Same

5. Duly Authorized Representative
Name Donald Gold
Title Vice President
Phone No. (631) 752-2898

6. Will Sub-Contractor(s) be used
[x] No [ ] Yes *(If yes, complete lines below)*
Name _____
Asbestos Lic. No. __ - ____
Name _____
Asbestos Lic. No. __ - ____

7. Party for Whom Work is Being Performed: Name The Cooper Group, Inc.
Address 666 Fifth Avenue, New York, NY 10103

C. PROJECT SITE INFORMATION

Provide all information requested below for the building/site at which the asbestos project will be conducted.

8. Project Location: County New York
Name of building _____
Room or other specific location Entire Basement, 1st and 2nd floors, roof and B-2 facade
Street address 133 Greenwich Street aka 25-29 Thames Street
City, town or village New York, New York 10006

9. Building Information
Current use Commercial
Prior Use Commercial
Building age _____
Building size _____ sq. ft.

10. Building Representative/Site Contact: Name Chanan Rozenbaum Phone No. (212 208-4614

83 (10-03)

NYC-WTC_000134150

NYC 9/11 Public Portal Document

D. PROJECT DETAILS

Provide all information requested below relating to specifics of asbestos removal.

11. Project Dates: Starting date _____ Completion date _____

If amended: Starting date _____ Completion date _____

Is this a phased project: ☑ No ☐ Yes *(If yes, list scope, location, and starting and completion dates for each phase in Section F. Remarks)*

12. Do You Anticipate Doing: ☐ Night work ☐ Weekend work ☑ Shift work
(Provide details in Section F.)

13. Dollar Amount of Contract Between Parties Named in Item 3 and Item 7 $ _____

14. If work is being conducted under a variance, check appropriate box and supply variance number.

☐ Applicable Variance No. _____ ☐ Individual Variance Petition No. _____

15. Asbestos Dissemination Prevention Methods *(use Section F. Remarks, and attach additional sheets if necessary)*

a) Type of equipment & ventilation systems used

Equipment:	Manufacturer:	Model Number:	Quantities:
HEPA Vacuums	N/A	N/A	2
Portable Decon Unit	N/A	N/A	1
Respirators	Various	N/A	8
Negative Air Unit	Various	N/A	1

b) Name of air monitoring firm Airtek Environmental Corp. Asbestos Lic. No. 99 - 0589

c) Laboratory performing the analysis

Name Airtek / ATC Associates ELAP Registration No. 11040 / 10879

16. Type of Asbestos Work *(check all that apply)*

☐ Pipe related ☑ Roofing/flashing ☐ Caulking/mastic ☐ Clean-up
☐ Vessel covering ☐ Siding ☐ VAT ☐ Sprayed-on insulation
☐ Demolition - if site survey was previously submitted, provide Reference No. _____
☑ Other *(specify)* WTC Dust and Tar

17. Type and Amount of Asbestos-Containing Material Involved

Friable linear feet			Friable square feet		42,378
Non-friable linear feet	+		Non-friable square feet	+	45
Total linear feet	=		**Total square feet**	=	42,423

NYC-WTC_000134151

NOTIFICATION OF DEMOLITION AND RENOVATION

Operator Project #	Postmark	Date Received	Notification

I. TYPE OF NOTIFICATION (O = Original/ R = Revised) : **O**

II. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)

OWNER	**Greenwich Street Project, LLC.**				
Address:	**666 Fifth Ave.**				
City:	**New York**	State:	**NY**	ZIP:	**10103**
Contact:	**Chanan Rozenbaum**			Tel:	**(347) 643-9960**
REMOVAL CONTRACTOR:					
Owner:	**Hazardous Elimination Corp.**				
Address:	**195 H Central Ave.**				
City:	**Farmingdale**	State:	**NY**	ZIP:	**11735**
Contact:	**Donald Gold**			Tel:	**631-752-2898**
OTHER OPERATOR:					
Address:					
City:		State:		ZIP:	
Contact:					

III.TYPE OF OPERATION (D = Demolition/R = Renovation):

IV. IS ASBESTOS PRESENT? (YES/NO) **Yes**

V. FACILITY DESCRIPTION (Include building name, number, and floor or room number):

Building name:					
Address:	**133 Greenwich St.**				
Address:					
City:	**New York**	State:	**NY**	County:	**Manhattan**
Site Location:	**Entire**				
Building Size:	Sq.meter:	SqFt:	# of Floors	Age in Yrs.	
Present Use:	**Commercial**		Prior Use: **Same**		

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL:

Bulk Sampling to analyze PLM.

VII. APPROXIMATE OF RACM TO BE REMOVED AND NON-FRIABLE ASBESTOS MATERIAL THAT WILL BE REMOVED. SPECIFY THE AMOUNT OF ASBESTOS BELOW:

	RACM to be Removed	non-friable Asbestos Material to be removed Category I	Category II
Linear feet Cable wrap insulation, cable insulation	0		
window caulking/glazing. Transite conduit.			
Surface Area- Square Feet WTC Dust	36,000		
Roof flashing/tar, window/coping stone caulk		45	
Surface Area- Square Feet Façade WTC Dust	6,378		
Volume RACM off Facility Component-Cubic Feet			

VIII. SCHEDULE DATES OF ASBESTOS REMOVAL (MM/DD/YY)	Start:	Completion:
IX. SCHEDULED DATES OF DEMOLITION/RENOVATION: (MM/DD/YY)	Start:	Completion:

NYC 9/11 Public Portal Document

NOTIFICATION OF DEMOLITION AND RENOVATION (continued)

X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:

All work to be done in accordance with the applicable New York State Industrial Code Rule 56, NYC-DEP Sub-Chapter G utilizing a site specific variance.

XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:

A HEPA Vacuum shall be kept on site at all times.

WASTE TRANSPORTER #1	**DJM**				
Address:	109-113 Jacobus Avenue				
City:	Kearny	State:	NJ		ZIP: 07032
Contact:	Vito Pesce			Telephone	201-997-8870
XIII. WASTE DISPOSAL SITE	**Meadowfill Landfill Corp.**				
Address:	Rt. 2 Box 68 Dawson Drive				
City:	Bridgeport	State:	WVA		ZIP: 26330
Contact:	John McGarvey			Telephone:	304-842-2784
XIII. WASTE DISPOSAL SITE	**Cumberland County Landfill**				
Address:	620 Newville Road				
City:	Newburgh	State:	PA		ZIP: 17242
Contact:				Telephone:	
XIII. WASTE DISPOSAL SITE					
Address:					
City:		State:			
Contact:				Telephone:	

XIV. IF DEMOLITION IS ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW

Name:	Title:
Authority:	
Date if Order (MM/DD/YY):	Date Ordered to Begin (MM/DD/YY)

XV. FOR EMERGENCY RENOVATIONS

Date and Hour of Emergency (MM/DD/YY):

Description of the Sudden , Unexpected Event:

Explanation of How the Event caused Unsafe Conditions or Serious Disruption of Industrial Operation:

XVI. DESCRIPTION OF PROCEDURE TO FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NON-FRIABLE ASBESTOS BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER:

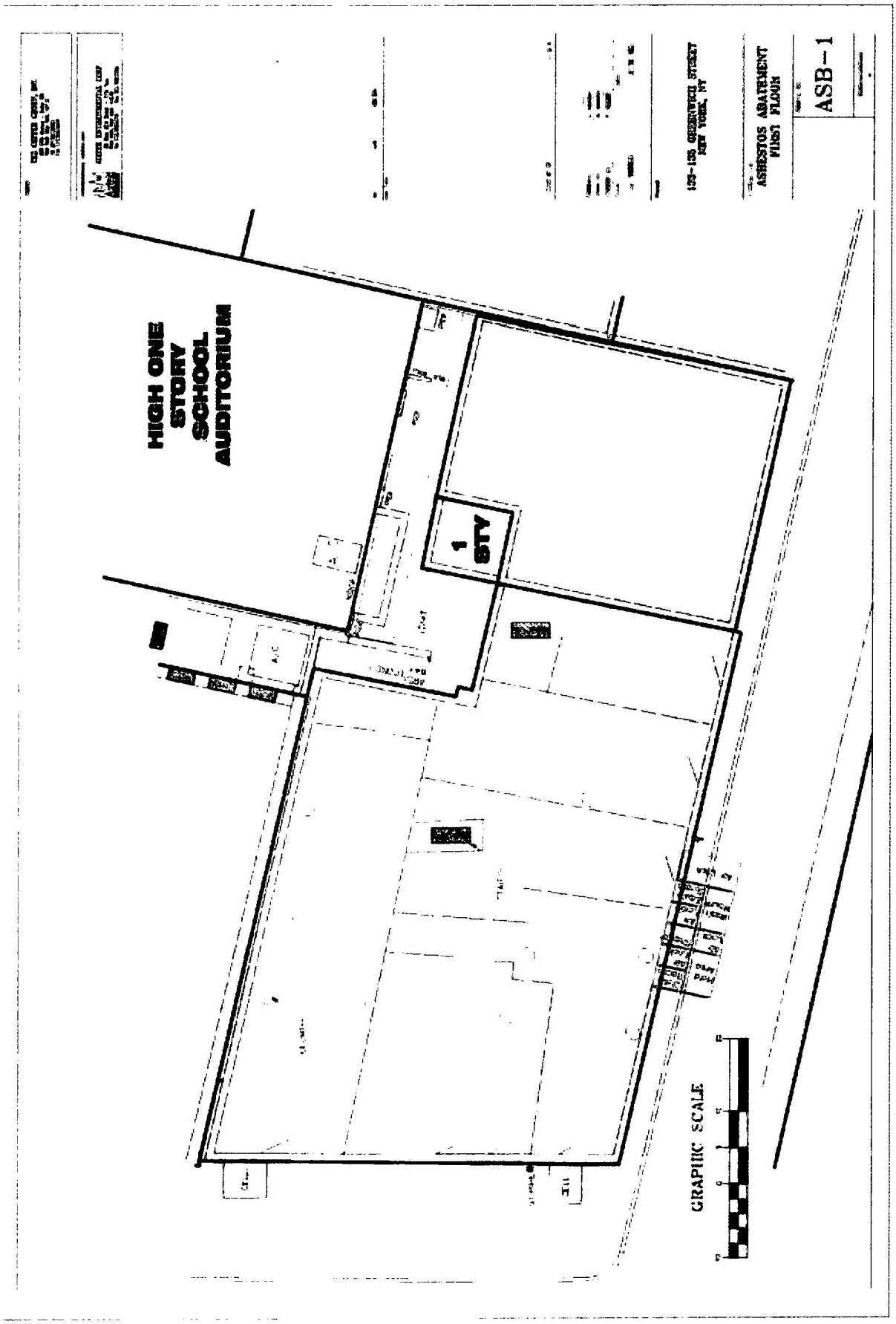
WORK WILL BE STOPPED IMMEDIATELY, NEW ENGINEERING CONTROL AND CLEAN-UP AS PER ICR-56 WILL BE IMPLEMENTED IMMEDIATELY, NEW ABATEMENT METHOD WILL BE EVALUATED TO ADDRESS NEW SITUATION PROPERLY.

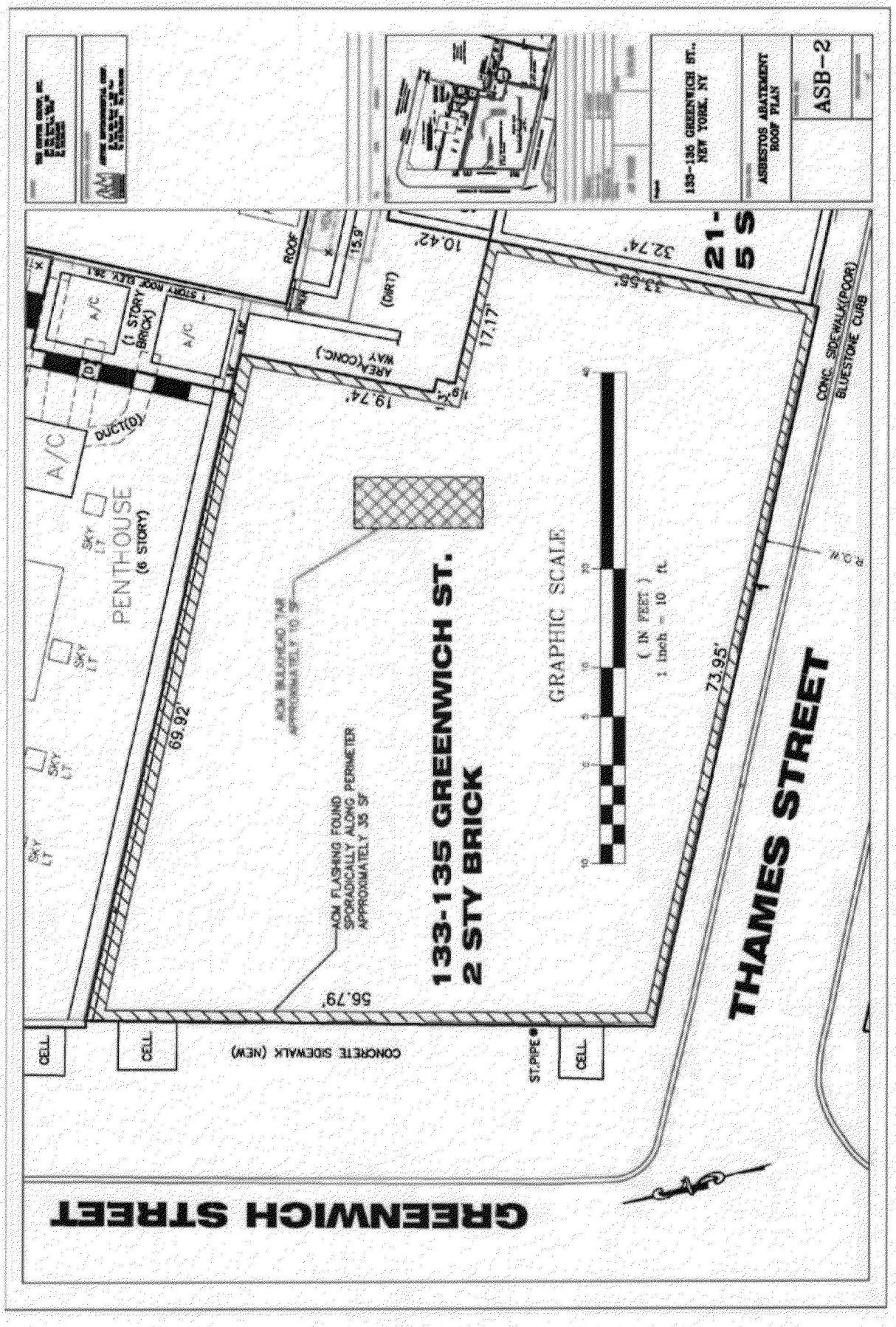
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE REGULATION (40CR PART 61 SUBPART M) WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required 1 year after promulgation).

Signature of Owner /Operator **Date**

XVIII. I CERTIFY THAT THE ABOVE MENTIONED INFORMATION IS CORRECT.

Signature of Owner /Operator **Date**


ASB-1
ASBESTOS ABATEMENT
FIRST FLOOR
HIGH ONE STORY SCHOOL AUDITORIUM
GRAPHIC SCALE


133-135 GREENWICH ST.
2 STY BRICK
PENTHOUSE
(6 STORY)
A/C
SKY LT
DUCT(D)
1 STORY ROOF BLDG. 2&1
(1 STORY BRICK)
AREA (CONC.)
WAY
(DIRT)
ROOF
15.9'
10.42'
32.74'
13.55'
17.17'
19.74'
69.92'
56.79'
73.95'
ACM FLASHING FOUND SPORADICALLY ALONG PERIMETER APPROXIMATELY 35 SF
ACM FLASHING FOUND APPROXIMATELY 10 SF
CONCRETE SIDEWALK (NEW)
ST.PIPE
CELL
CONC. SIDEWALK(POOR)
BLUESTONE CURB
R.O.W.
GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.
THAMES STREET
GREENWICH STREET
133-135 GREENWICH ST.
NEW YORK, NY
ASBESTOS ABATEMENT
ROOF PLAN
ASB-2

NYC 9/11 Public Portal Document

AIRTEK ENVIRONMENTAL CORP.

39 WEST 38TH STREET, 12TH FLOOR, NEW YORK, NY 10018
PHONE (212) 768-0516 FAX (212) 768-0759
WWW.AIRTEKENV.COM

September 23, 2005

Mr. Rajappan Radhakrishnan, Director
New York City Department of Environmental Protection
Bureau of Air, Noise and Hazardous Materials
59-17 Junction Blvd., 8th Floor
Jamaica, NY 11373

Re: Variance Request – 21-23 Thames Street
Building Decontamination and De-construction

Dear Mr. Radhakrishnan:

The Copper Group, Inc. has engaged Airtek Environmental Corp. (Airtek) to prepare the following Variance Request in support of the decontamination and de-construction of the building located at 21-23 Thames Street, New York, NY.

Though it sustained little physical damage, the building at 21-23 Thames Street was impacted in places by fallout from the events of September 11, 2001. It is the Owner's intent to conduct abatement of in-place asbestos, and to effect a decontamination of the interior of the building so that conventional demolition activities can be completed.

Asbestos Survey:

Airtek has undertaken an asbestos survey intended to coordinate and complete previous survey work that has been conducted at the site. All previous documentation was reviewed and a site survey and bulk sampling was conducted. Based on this survey work, an inventory of in-place asbestos has been developed. The results of this survey are attached.

Health & Safety Plan:

A Certified Industrial Hygienist (CIH) from Airtek has developed a site-specific HASP to be applied to all site decontamination operations. The HASP details requirements for access/egress and requirements for Personal Protective Equipment for workers at the site. The HASP is attached.

NYC DEP Variance Application:

In order to execute the particular requirements of this unique project, specific relief from RCNY Title 15 is requested as follows:

NYC-WTC_000134156

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Exterior:

We are requesting a variance from the following subsections to facilitate the decontamination of the facade:

Section 1-81(j)	No pre-cleaning of the work area(s)
Section 1-81(m)	Partial plasticization of the work area(s)
Section 1-82(a) & 1-83(a)	Remote decontamination facilities
Section 1-91	No negative air
Section 1-112(d) & 1-112(e)	No 1st & 2nd settling period and no 2nd & 3rd cleaning

The exterior of the building was decontaminated as a part of the NYC DEP Building Exterior Cleaning Program following 9/11/01. Airtek's visual inspection of the façade and roof indicates that it is advisable to conduct low-pressure power washing prior to initialing demolition activities. The exterior of the building will be cleaned in accordance with the NYC DEP WTC Dust/Residue Roof & Façade Cleaning Procedures.

Interior:

Phase 1 –Soft Strip:

We are requesting a variance from the following subsections:

Section 1-125(i) Isolation Barriers

We request relief from 1-125(i): Isolation Barriers. It is the intent of the project to seal all windows and communicating openings to the outside of the building from the outside with two layers of 6-mil poly and plywood barriers. The intent of this action is to create a sealed structure that will allow decontamination activities within the building while reducing the possibility of migration of dust to the outside of the structure.

All interior materials, including moveable objects, will be subject to decontamination and removal or, if porous, will be bagged and disposed of as ACM waste at a minimum. Additional waste characterization will be conducted per Part IV Waste Management Plan. All ceiling systems (plaster, tiles, sheetrock, etc.), wall systems (plaster, wall board, etc.), and floor systems, (tiles, carpet, etc.) will be removed and bagged for disposal as ACM waste at a minimum. Remaining structural members, pipes, boiler and freezer boxes will be wet-wiped, HEPA vacuumed, and encapsulated with a penetrating encapsulant. All accessible interstitial spaces will be wet-wiped, HEPA-vacuumed, and encapsulated. Operable windows will be articulated, wet wiped, HEPA-vacuumed, and encapsulated. Full worker and waste decontamination facilities will be attached to the entrance on Thames Street. The decontamination facilities will comply with NYC DEP Title 15 §1-82 & §1-83.

Phase II – In Place Interior Friable ACM:

Upon completion of the soft strip phase, interior friable ACM will be abated.

1. Pipe Insulation – 57 lf

The pipe insulation will be abated utilizing NYC DEP Tent and Glovebag procedures.

Phase III - In Place Exterior ACM:

We are requesting a variance from the following subsections for the roofing materials:

Section 1-41(c)	During abatement air sampling inside the work area
Section 1-41(d)	No post abatement clearance air monitoring
Section 1-81(j)	No pre-cleaning of the work area(s)
Section 1-81(m)	Partial plasticization of the work area(s)
Section 1-82(a) & 1-83(a)	Remote decontamination facilities

NYC 9/11 Public Portal Document

Section 1-91	No negative air
Section 1-102(b)	Not to fully saturate ACRM with amended water
Section 1-112(d) & 1-112(e)	No 1st & 2nd settling period and no 2nd & 3rd cleaning

We proposed to use Attachment FR - Procedures for use of Foam or Similar Viscous Liquid in Removal of Asbestos Containing Roofing (ACRM) in New York City. In addition to the conditions set forth in Attachment FR Section E-6 arrangements have been made to seal openings at High School of Economics & Finance – Refer to Work Plan for details.

In-place ACM has been identified as follows:

Main Roof:
1. Roof Membrane – 350 sf
2. Roof Flashing – 150 sf
3. Bulkhead Tar – 25 sf

1st Floor Roof:
1. Roof Membrane – 100 sf
2. Roof Flashing – 46 sf

We are requesting a variance from the following subsections for the coping stone caulk:

Section 1-41(c)	During abatement air sampling inside the work area
Section 1-41(d)	No post abatement clearance air monitoring
Section 1-106(b)	To use partial tents

1. Coping Stone Caulk – 1 sf

We proposed to use Attachment IC – ACM caulking material from the top of the parapet wall(s) on the roof.

We are requesting a variance from the following subsections for the exterior window caulk:

Section 1-41(c)	During abatement air sampling inside the work area
Section 1-41(d)	No post abatement clearance air monitoring
Section 1-106(b)	To use partial tents

1. Window Caulk – 10 sf (210 lf)

We proposed to use Attachment EC – ACM caulking materials from building facades.

These materials will be abated last in the decontamination sequence. For detailed information on the asbestos survey conducted, please refer to the Airtek Asbestos Survey Report dated May 31, 2005 (Attached).

Utilities - General:

Utility service is currently cut off to the building. All electricity and water required for the work will be drawn from sources outside the building.

Project Monitoring:

NYC 9/11 Public Portal Document

Project Monitoring: Throughout the decontamination activities, project air monitoring will be conducted in addition to the Perimeter Monitoring described above. Project Monitoring will be conducted in strict accordance with RCNY Title 15 Chapter 1, Section 1-41 to 1-45 and approved variance application. All sample analyses will be by TEM.

Clearance Testing: Aggressive area clearance testing for asbestos will be conducted for all work areas by TEM.

Clearance Criteria:

Clearance testing for asbestos will be acceptable when all samples for a given work area meet the 70 structures per square millimeter TEM standard. Additional clearance sampling shall be performed as specified in the work plan.

Thank you for your time and consideration,

Sincerely,

Michael Porter

Michael Porter
Senior Project Manager

MP:mtf

NYC 9/11 Public Portal Document

7624206030

NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
Asbestos Control Program
59-17 Junction Boulevard, 8th Floor, Flushing, NY 11373-5108

Building Dept. or TRC No
For OFFICIAL USE ONLY

ONLY TYPEWRITTEN FORMS WILL BE ACCEPTED

ASBESTOS PROJECT NOTIFICATION
(ASBESTOS INSPECTION REPORT)

When submitting this form at the NYC Department of Buildings, the original form and three (3) copies with original signatures are required. Submittal at the NYCDEP requires one copy of the form with original signatures. This form must be submitted to the NYC DEP not less than one week in advance of the start of abatement activities.

1. $1200 (See fee schedule)

I. FACILITY

2. Address 23 (Premise #) Thames Street (Prefix / Street Name) Borough Manhattan Zip 10006

AKA 21 Thames Street 3. Block 52 4. Lot 8

5. Type of Facility Commercial 6. Name of Building

II. BUILDING OWNER

7. Name Greenwich Street Project, LLC. 8. Contact Person Chanan Rozenbaum

9. Tel.# (347) 643-9960 Fax# (212) 208-4614

10. Address 666 Fifth Avenue City New York State NY Zip 10103

III. GENERAL CONTRACTOR

11. Name Tel. #

IV. ASBESTOS ABATEMENT CONTRACTOR

12. Name Hazardous Elimination Corp. 13. Contact Person Ernie Carranza

14. Federal Employer ID. # PII 15. Tel. # (631) 752-2898 Fax # (631) 752-2910

16. Address 195 H Central Avenue City Farmingdale State NY Zip 11735

V. THIRD PARTY AIR MONITOR

17. Name Airtek Environmental Corp. 18. Contact Person Benn Lewis

19. Federal Employer ID. # PII 20. Tel. # (212) 768-0516 Fax # (212) 768-0759

21. Address 39 West 38th Street City New York State NY Zip 10018

22. Sample Analysis Laboratory Airtek / ATC Associates 23. NYS DOH ELAP # 11040/10879

VI. PROJECT INFORMATION

24. Starting date for this portion of work Projected completion date

Asbestos work schedule: ☑ Monday ☑ Tuesday ☑ Wednesday ☑ Thursday ☑ Friday ☑ Saturday ☑ Sunday

Shift From: ☐ am ☐ pm to ☐ am ☐ pm

If other, specify

Access to inspect the premises must be provided during the work schedule indicated in this item.

25. Total amount of asbestos-containing material to be abated during this work

18,322 Square Feet, and/or 57 Linear Feet

ACP7
12/30/03

NYC-WTC_000134160

NYC 9/11 Public Portal Document

6426206039 **ASBESTOS INSPECTION REPORT (continued)**

26. Asbestos Hauler DJM Co. Inc. NYS DEC Permit # NJ-344 Tel.# (973) 491-0006

Disposal Site(s) Meadowfill Landfill, Bridgeport WV & Cumberland Landfill Shippberg, PA

27. This asbestos abatement is part of a (Item a through e requires filing of this form with the NYC Department of Buildings)

a) ☑ Demolition b) ☐ Boiler Replacement c) ☐ Sprinkler Replacement d) ☐ Renovation/Alteration

e) ☐ Fireproofing Replacement f) ☑ Other (Describe) Asbestos Abatement/WTC Dust Remediation

28. TYPE OF ABATEMENT (Check all appropriate boxes)

☑ Removal ☐ Enclosure ☐ Encapsulation ☐ Repair ☐ Clean up

29. ABATEMENT PROCEDURE (Check all appropriate boxes)

☑ Full Containment ☐ Glovebag ☐ Tent ☑ DEP Variance Application

30.LOCATIONS OF ABATEMENT

Floor(s)	SECTION OF FLOOR (e.g. entire, east wing, room # (name room, suite, etc.))	AFFECTED SURFACES CONTAINING ACM (e.g. Pipe tagging, ceiling, plenum ducts, storage tanks, decking, etc.)	AMOUNT OF ACM SQUARE FEET	AMOUNT OF ACM LINEAR FEET	DESCRIPTION OF WORK BEING PERFORMED (e.g. running cable, installing fire sprinklers, removing and replacing boilers, etc.)
Bsmt-5	Entire	WTC Dust	9,064		Sub-Chapter G
Bsmt	Entire	Pipe Insulation		32	Asbestos Abatement
1	Entire	Pipe Insulation		15	Asbestos Abatement
2	Entire	Pipe Insulation		10	Asbestos Abatement
Roof	1st Floor Roof	Roof & Flashing	146		Asbestos Abatement
Roof	5th Floor Roof	Roof, Flashing & Tar	525		Asbestos Abatement
1-5	Facade	Window Caulk	10		Asbestos Abatement
1-5	Facade	WTC Dust	8,576		WTC "Bldg Ext. Cleanup"
Roof	5th Floor Roof	Coping Stone Caulk	1		Asbestos Abatement
Roof					WTC Dust

Additional pages attached ☐

31. I hereby declare that the information provided herein is true and complete to the best of my knowledge. I am familiar with Federal, State and NYC laws and regulations applicable to asbestos related work.

Airtek Environmental	Hazardous Elimination	Airtek Environmental
Print Name of Air Monitor	Print Name of Asbestos Contractor	Print Name of Applicant
Signature	Signature	Signature
Date	Date	Date

32. I understand that as the owner of a building where asbestos abatement activity occurs, I am responsible for the performance of the asbestos abatement activities in accordance with the Asbestos Control Program Rules. I have contracted the third party air monitor who is completely independent of all parties involved in the asbestos project. I hereby declare that I have authorized the filing of this notification for the work specified herein.

Greenwich Street Project, LLC. _____ _____

Print Name of Owner Signature Date

A STAMPED COPY OF THIS FORM INCLUDING AMENDMENTS MUST BE AVAILABLE AT THE WORK SITE.

Any modification of information provided on this form must be reported immediately in writing directly to the NYC DEP ACP.

The requirements of the Asbestos Control Program Rules may not be lawfully avoided or lessened through the performance of work in incremental or piecemeal fashion.

NYC-WTC_000134161

NYC 9/11 Public Portal Document

NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
Asbestos Control Program
59-17 Junction Boulevard, 8th Floor, Corona, NY 11368-5107

Asbestos Variance Application

ONLY TYPEWRITTEN FORMS WILL BE ACCEPTED

FOR OFFICIAL USE ONLY
Variance #_____
Fee Paid _____
Notification #_____

I. FACILITY

Address 21-23 Thames Street Borough Manhattan Zip 10006

Application must be made at least 2 weeks prior to the start of work.

II. APPLICANT

Name Airtek Environmental Corp. Tel # (212) 768-0516

Address 39 West 38th Street City New York State NY Zip 10018

Capacity: ☐ Contractor ☑ Consultant ☐ Owner ☐ Other_____ Contact Person Benn Lewis

III. SPECIFY ALL NYC DEP OR NYS DOL (ICR56) ASBESTOS RULE PROVISIONS FROM WHICH A VARIANCE IS REQUESTED

~~1-41 (c), 1-41(d), 1-81(j), 1-81(m), 1-82(a), 1-83(a), 1-83(b)2, 1-91, 1-102(b), 1-112(d), 1-112(e), 1-125(l)~~

SPECIFY FLOORS AND/OR AREAS WHERE WORK INVOLVING THIS VARIANCE IS TO OCCUR

~~Basement, 1st, 2nd, 3rd, 4th, 5th & Roof~~

REASONS FOR REQUEST AND DESCRIPTION FOR PROPOSED ACTION (Attachment(s) shall be submitted in TRIPLICATE)

Explain why the procedures required by Title 15, Chapter 1 of the Rules of the City of New York (RCNY) and/or Part 56 of Title 12 of New York Codes, Rules and Regulations (Subparts 56-4 through 56-17) cannot be used. (Attach Additional Sheets)

State the alternative procedures that will be employed to satisfy each requirement as modified. (Attach Additional Sheets)

Provide color coded drawings identifying work area(s) and location of decontamination enclosure system(s).

IV. FEE SCHEDULE

Amount of ACM affected by this variance: 18,322 square feet + 57 linear feet = Total Amount of ACM 18,379 feet

	If total amount of ACM is less than 5000 feet:	If total amount of ACM is 5000 feet or more:
Seven day notification period waiver	$300	$400
First sub-section (per category)	$400	$600
Each additional sub-section (per category)	$200	$300
Maximum fee	$1200	$1800

See Section 1-03(e) of the NYCDEP Asbestos Rules for category definitions.

Enter applicable fee based on schedule above Total Fees $_____

V. I hereby declare that the information provided herein and in any and all accompanying attachments is true and complete to the best of my knowledge. I understand that failure to comply with conditions set forth by the Department in an approval of the application shall render this variance null and void.

Greenwich Street Project, LLC.
Print Name of Owner

Airtek Environmental Corp.
Print Name of Applicant (If not owner)

Signature of Owner Date

Signature of Applicant Date

Work involving a variance may not commence prior to the receipt of the Department's approval of the application. Any violation of the terms of any variance issued pursuant to Title 15, Chapter 1 of the RCNY Section 1-03 is considered a violation of the lettered subdivision modified by the variance.

ACP0 2/2001

NYC-WTC_000134162

NYC 9/11 Public Portal Document

ASBESTOS PROJECT NOTIFICATION

STATE OF NEW YORK
DEPARTMENT OF LABOR

Division of Safety & Health
Asbestos Control Bureau
Building 12, Room 157
State Campus
Albany, NY 12240

A. TYPE OF NOTIFICATION

Check only one type of notification below.

- [x] Initial ..... Complete all sections and submit 10 calendar days prior to starting date.
- [ ] Amended ..... Submit amended notification with all sections completed and amended item(s) circled.
- [ ] Cancelled ..... Complete Section G and attach copy of initial notification or complete all sections.
- [ ] Emergency ..... **You must first call the Program Manager's office of the Asbestos Control Bureau at 518-457-1255 for prior approval of emergency status, then complete and return this form including:**

Date (__/__/__) Time (_____) Emergency Status Granted
Authorized by: _____ (From Asbestos Control Bureau)

B. CONTRACTOR INFORMATION

Provide all information requested below.

1. FEIN: PII

2. Asbestos Lic. No.: 99 - 0148

3. Contractor Name and Address:
Hazardous Elimination Corp
195H Central Avenue
Farmingdale, New York 11735

4. Mailing Address (*if different*):
Same

5. Duly Authorized Representative
Name: Donald Gold
Title: Vice President
Phone No.: (631) 752-2898

6. Will Sub-Contractor(s) be used
[x] No [ ] Yes (*If yes, complete lines below*)
Name _____
Asbestos Lic. No. __ - ____
Name _____
Asbestos Lic. No. __ - ____

7. Party for Whom Work is Being Performed: Name: The Cooper Group, Inc.
Address: 666 Fifth Avenue, New York, NY 10103

C. PROJECT SITE INFORMATION

Provide all information requested below for the building/site at which the asbestos project will be conducted.

8. Project Location: County: New York
Name of building: _____
Room or other specific location: Entire Basement, 1st and 2nd floors, roof and facade
Street address: 23 Thames Street
City, town or village: New York, New York 10006

9. Building Information
Current use: Commercial
Building age: _____
Prior Use: Commercial
Building size: _____ sq. ft.

10. Building Representative/Site Contact: Name: Chanan Rozenbaum Phone No.: (212 208-4614

SH-483 (10-03)

NYC-WTC_000134163

NYC 9/11 Public Portal Document

D. PROJECT DETAILS

Provide all information requested below relating to specifics of asbestos removal.

11. Project Dates: Starting date _____ Completion date _____

If amended: Starting date _____ Completion date _____

Is this a phased project: ☑ No ☐ Yes *(If yes, list scope, location, and starting and completion dates for each phase in Section F, Remarks)*

12. Do You Anticipate Doing: ☐ Night work ☐ Weekend work ☑ Shift work
(Provide details in Section F.)

13. Dollar Amount of Contract Between Parties Named in Item 3 and Item 7 $_____

14. If work is being conducted under a variance, check appropriate box and supply variance number.

☐ Applicable Variance No. _____ ☐ Individual Variance Petition No. _____

15. Asbestos Dissemination Prevention Methods *(use Section F, Remarks, and attach additional sheets if necessary)*

a) Type of equipment & ventilation systems used

Equipment:	Manufacturer:	Model Number:	Quantities:
HEPA Vacuums	N/A	N/A	2
Portable Decon Unit	N/A	N/A	1
Respirators	Various	N/A	8
Negative Air Unit	Various	N/A	1

b) Name of air monitoring firm Airtek Environmental Corp. Asbestos Lic. No. 99 - 0589

c) Laboratory performing the analysis

Name Airtek / ATC Associates ELAP Registration No. 11040 / 10879

16. Type of Asbestos Work *(check all that apply)*

☑ Pipe related ☑ Roofing/flashing ☐ Caulking/mastic ☐ Clean-up
☐ Vessel covering ☐ Siding ☐ VAT ☐ Sprayed-on insulation
☐ Demolition - if site survey was previously submitted, provide Reference No. _____
☑ Other *(specify)* WTC Dust, window caulking and coping stone caulking

17. Type and Amount of Asbestos-Containing Material Involved

Friable linear feet		57	Friable square feet		17,651
Non-friable linear feet	+	_____	Non-friable square feet	+	671
Total linear feet	=	_____	**Total square feet**	=	18,322

NYC-WTC_000134164

E. FEE SCHEDULE

Refer to item 17 to calculate your required fees. This fee is non-refundable. Check one box for linear feet and one box for square feet.

18. Fee Schedule:

a) Linear feet		b) Square feet	
☑ 0 - 259	($0)	☐ 0 - 159	($0)
☐ 260 - 429	($100)	☐ 160 - 259	($100)
☐ 430 - 824	($200)	☐ 260 - 499	($200)
☐ 825 - 1649	($500)	☐ 500 - 999	($500)
☐ 1650 or more	($1000)	☑ 1000 or more	($1000)

19. Total Fee Due for Project $ 1000.00 *(add 18a and 18b)*

F. REMARKS

Use this area to provide additional information.

Asbestos Abatement shall be performed utilizing NYC DEP Sub-Chapter G Regulations and site specific variance.

All waste shall be double bagged for disposal purposes.

Waste Disposal Site: Meadowfill Landfill, Route 2, Box 68, Bridgeport, WV.
BFI Imperial Landfill- PO Box 47, Route 980 & Boggs Rd., Imperial PA
Cumberland County Landfill - 620 Newville Rd, Newburgh, PA 17242

Waste Hauler/Transporter: DJM, Inc. 109-113 Jacobus Ave., Kearny, NJ 07032

G. SIGNATURE

I certify that the information specified on this notification is true and accurate and that the project will be conducted in compliance with the requirements of Code Rule 56.

June 9th, 2005
Date

Signature of the Contractor or Duly Authorized Representative

Print Name of the Contractor or Duly Authorized Representative

See next page for submission instructions and notification information.

NOTIFICATION OF DEMOLITION AND RENOVATION			
Operator Project #	Postmark	Date Received	Notification

I. TYPE OF NOTIFICATION (O = Original/ R = Revised) : **O**

II. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)

OWNER	**Greenwich Street Project, LLC.**			
Address:	**666 Fifth Ave.**			
City:	**New York**	State:	**NY**	ZIP: **10103**
Contact:	**Chanan Rozenbaum**			Tel: **(347) 643-9960**
REMOVAL CONTRACTOR:				
Owner:	**Hazardous Elimination Corp.**			
Address:	**195 H Central Ave.**			
City:	**Farmingdale**	State:	**NY**	ZIP: **11735**
Contact:	**Donald Gold**			Tel: **631-752-2898**
OTHER OPERATOR:				
Address:				
City:		State:		ZIP:
Contact:				

III.TYPE OF OPERATION (D = Demolition/R = Renovation):

IV. IS ASBESTOS PRESENT? (YES/NO) **Yes**

V. FACILITY DESCRIPTION (include building name, number, and floor or room number):

Building name:					
Address:	**23 Thames St.**				
Address:					
City:	**New York**	State:	**NY**		County: **Manhattan**
Site Location:	**Entire**				
Building Size:	Sq.meter:	SqFt:		# of Floors	Age in Yrs.
Present Use:	**Commercial**			Prior Use: **Same**	

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL:

Bulk Sampling to analyze PLM.

VII. APPROXIMATE OF RACM TO BE REMOVED AND NON-FRIABLE ASBESTOS MATERIAL THAT WILL BE REMOVED. SPECIFY THE AMOUNT OF ASBESTOS BELOW:

	RACM to be Removed	non-friable Asbestos Material to be removed	
		Category I	Category II
Linear feet Cable wrap insulation, cable insulation	**57**		
window caulking/glazing. Transite conduit.			
Surface Area- Square Feet WTC Dust	**9,064**		
Roof flashing/tar, window/coping stone caulk		**682**	
Surface Area- Square Feet Façade WTC Dust	**8,576**		
Volume RACM off Facility Component-Cubic Feet			

VIII. SCHEDULE DATES OF ASBESTOS REMOVAL (MM/DD/YY)	Start:	Completion:
IX. SCHEDULED DATES OF DEMOLITION/RENOVATION: (MM/DD/YY)	Start:	Completion:

NYC 9/11 Public Portal Document

NOTIFICATION OF DEMOLITION AND RENOVATION (continued)

X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:

All work to be done in accordance with the applicable New York State Industrial Code Rule 56, NYC-DEP Sub-Chapter G utilizing a site specific variance.

XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:

A HEPA Vacuum shall be kept on site at all times.

WASTE TRANSPORTER #1	**DJM**				
Address:	**109-113 Jacobus Avenue**				
City:	**Kearny**	State:	**NJ**		**ZIP: 07032**
Contact:	**Vito Pesce**			Telephone	**201-997-8870**
XIII. WASTE DISPOSAL SITE	**Meadowfill Landfill Corp.**				
Address:	**Rt. 2 Box 68 Dawson Drive**				
City:	**Bridgeport**	State:	**WVA**		**ZIP: 26330**
Contact:	**John McGarvey**			Telephone:	**304-842-2784**
XIII. WASTE DISPOSAL SITE	**Cumberland County Landfill**				
Address:	**620 Newville Road**				
City:	**Newburgh**	**State:**	**PA**		**ZIP: 17242**
Contact:				**Telephone:**	
XIII. WASTE DISPOSAL SITE					
Address:					
City:		**State:**			
Contact:				**Telephone:**	

XIV. IF DEMOLITION IS ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW

Name:	Title:
Authority:	
Date if Order (MM/DD/YY):	Date Ordered to Begin (MM/DD/YY)

XV. FOR EMERGENCY RENOVATIONS

Date and Hour of Emergency (MM/DD/YY):

Description of the Sudden , Unexpected Event:

Explanation of How the Event caused Unsafe Conditions or Serious Disruption of Industrial Operation:

XVI. DESCRIPTION OF PROCEDURE TO FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NON-FRIABLE ASBESTOS BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER:

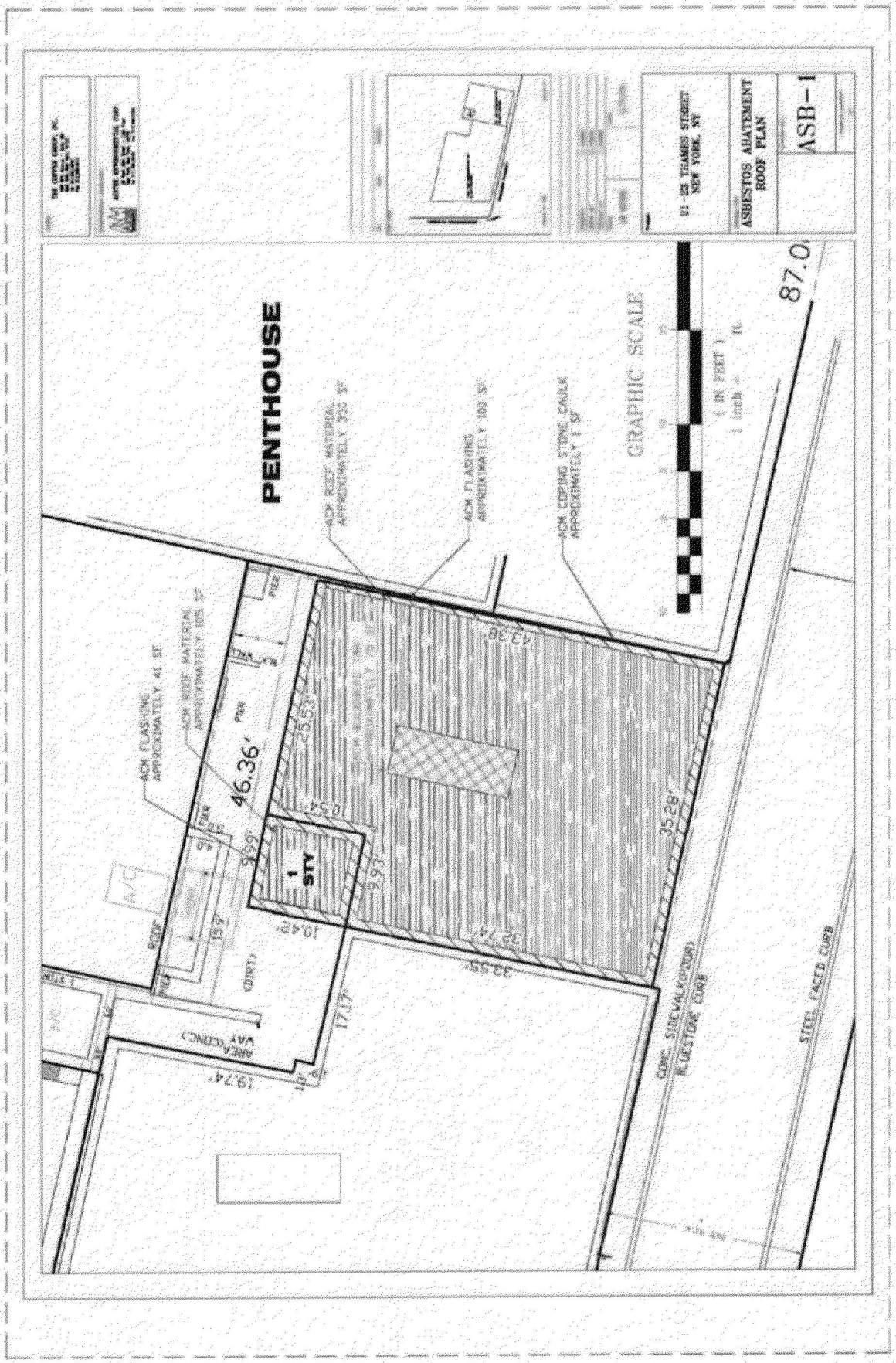
WORK WILL BE STOPPED IMMEDIATELY, NEW ENGINEERING CONTROL AND CLEAN-UP AS PER ICR-56 WILL BE IMPLEMENTED IMMEDIATELY, NEW ABATEMENT METHOD WILL BE EVALUATED TO ADDRESS NEW SITUATION PROPERLY.

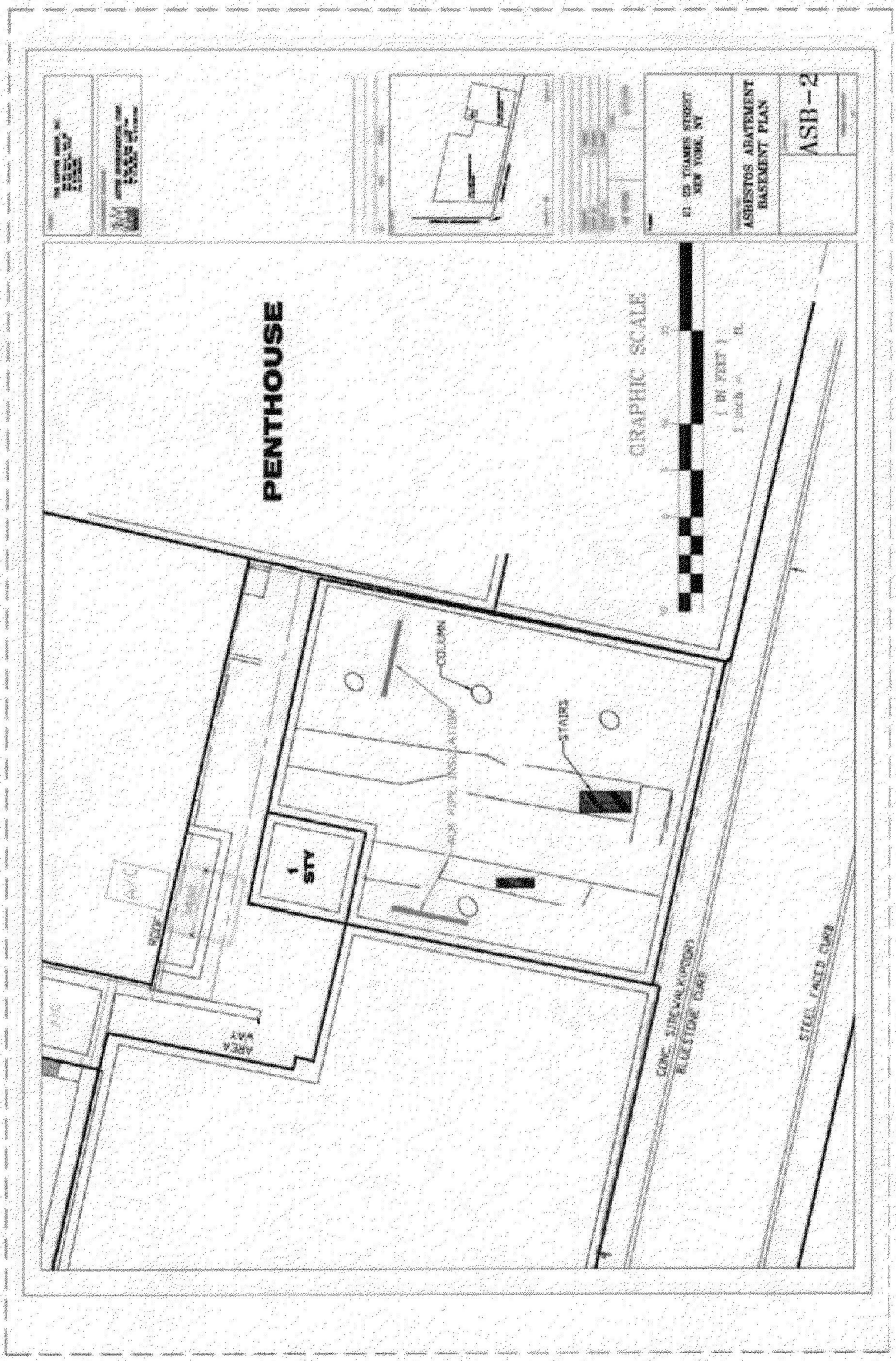
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE REGULATION (40CR PART 61 SUBPART M) WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required 1 year after promulgation).

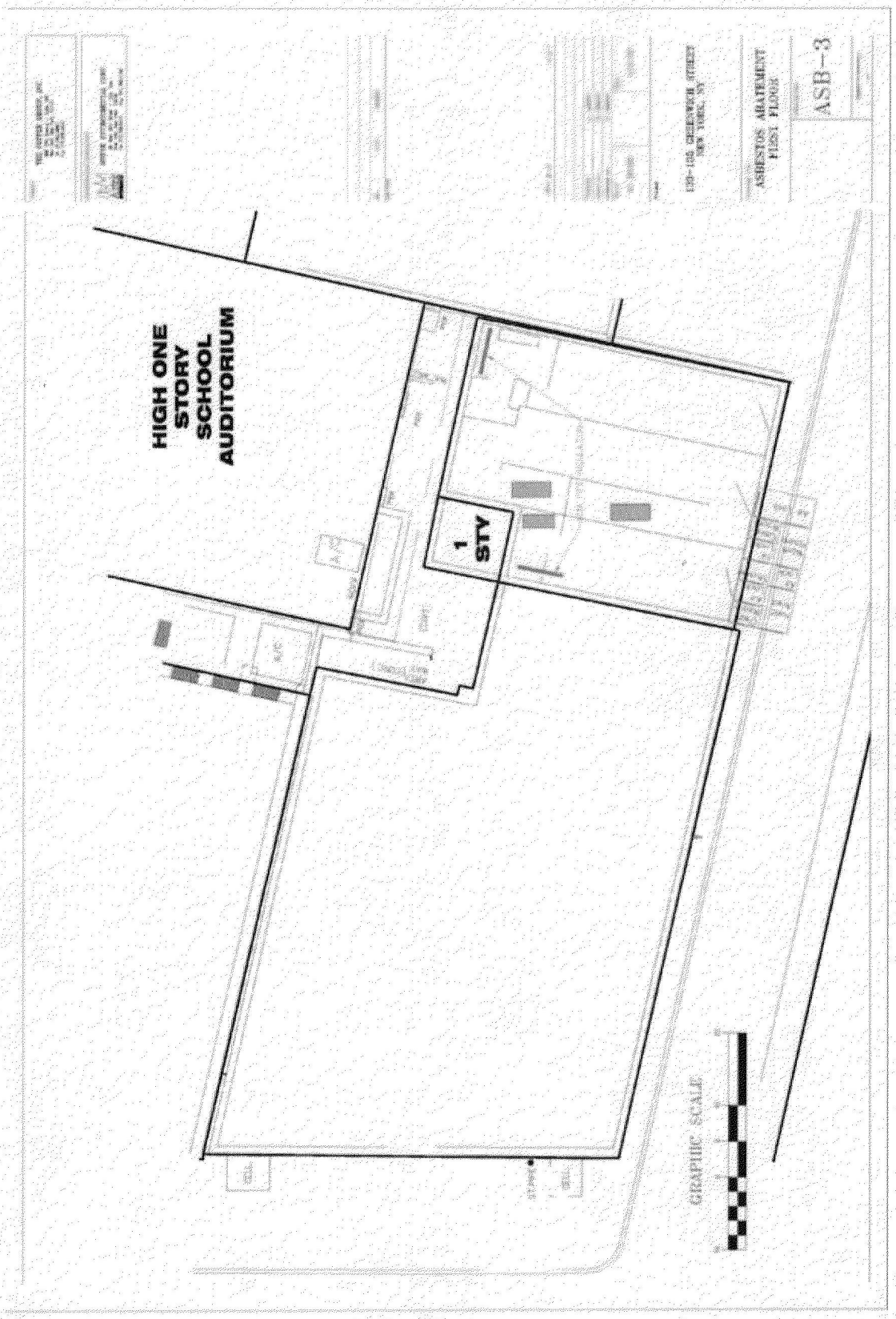
Signature of Owner /Operator **Date**

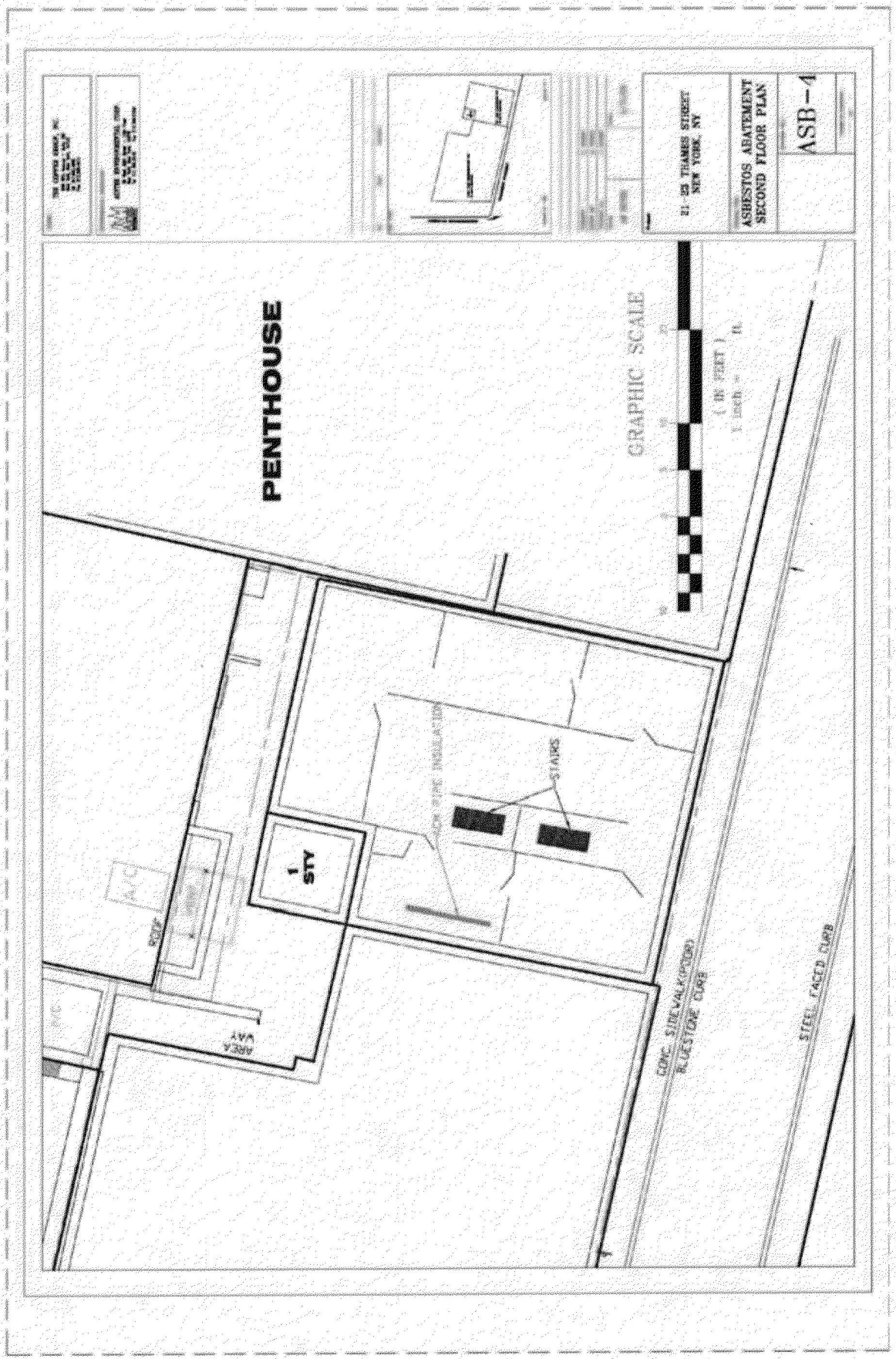
XVIII. I CERTIFY THAT THE ABOVE MENTIONED INFORMATION IS CORRECT.

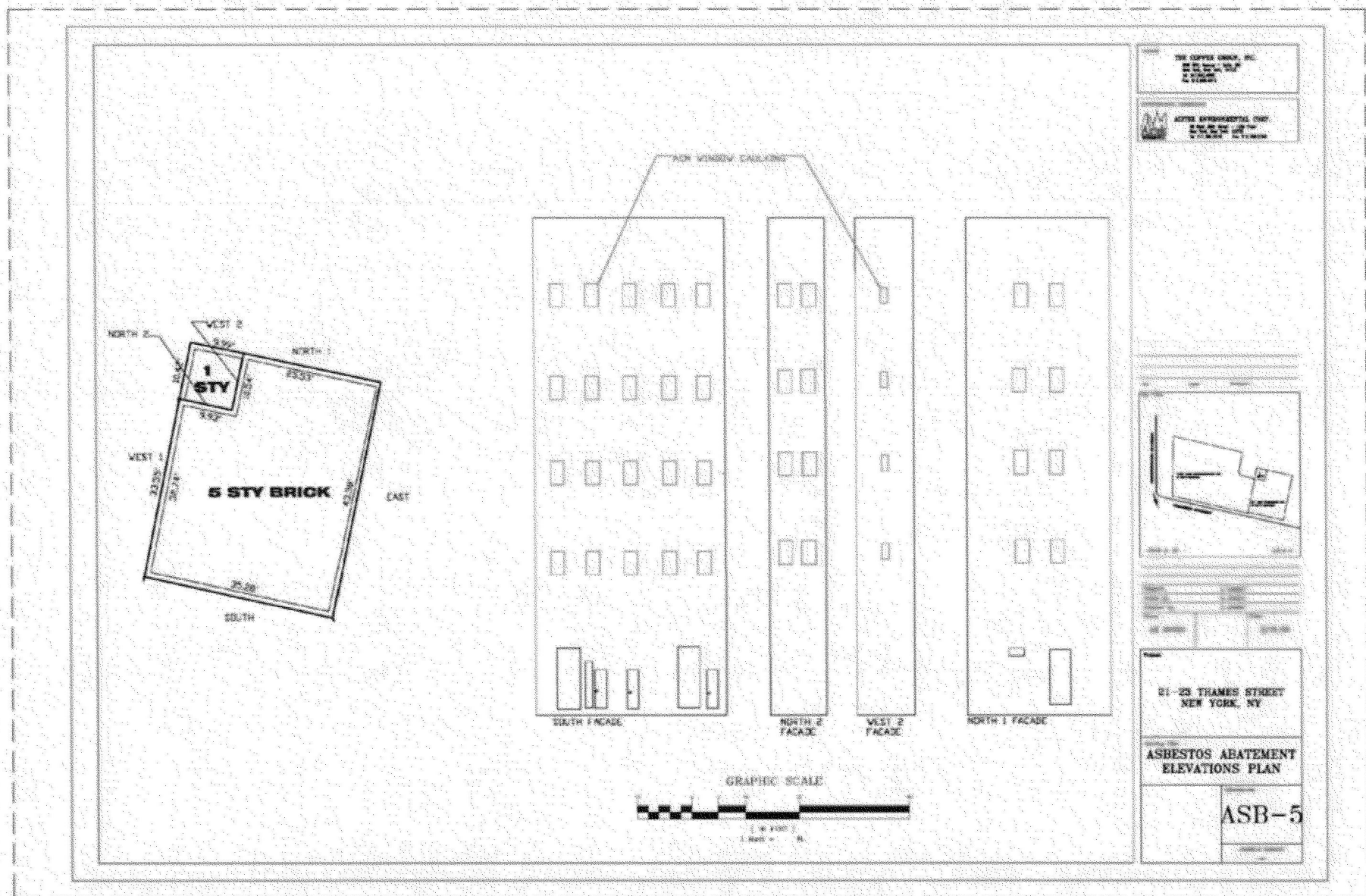
Signature of Owner /Operator **Date**


PENTHOUSE
ACM ROOF MATERIAL APPROXIMATELY 300 SF
ACM FLASHING APPROXIMATELY 100 SF
ACM COPING STONE CAULK APPROXIMATELY 1 SF
ACM FLASHING APPROXIMATELY 41 SF
ACM ROOF MATERIAL APPROXIMATELY 105 SF
GRAPHIC SCALE
(IN FEET)
1 inch = ft.
87.0
46.36'
1 STV
43.38'
35.28'
32.74'
33.55'
10.42'
17.17'
19.74'
AREA (CONC.)
CONC. SIDEWALK (POOR)
BLUESTONE CURB
STEEL FACED CURB
21-23 THAMES STREET
NEW YORK, NY
ASBESTOS ABATEMENT
ROOF PLAN
ASB-1


PENTHOUSE
GRAPHIC SCALE
(IN FEET)
1 inch = ft.
21-23 THAMES STREET
NEW YORK, NY
ASBESTOS ABATEMENT
BASEMENT PLAN
ASB-2
COLUMN
STAIRS
1 STY
AREA WAY
CONC. SIDEWALK(POOR)
BLUESTONE CURB
STEEL FACED CURB


ASB-3
ASBESTOS ABATEMENT
FLOOR
HIGH ONE STORY SCHOOL AUDITORIUM
1 STY
GRAPHIC SCALE


ASB-4
ASBESTOS ABATEMENT
SECOND FLOOR PLAN
21-25 THAMES STREET
NEW YORK, NY
PENTHOUSE
GRAPHIC SCALE
(IN FEET)
1 inch =
1 STY
STAIRS
AREA WAY
CONC. SIDEWALK (TYP.)
BLUESTONE CURB
STEEL FACED CURB


NORTH 2
WEST 2
NORTH 1
1 STY
WEST 1
5 STY BRICK
EAST
SOUTH
SOUTH FACADE
NORTH 2 FACADE
WEST 2 FACADE
NORTH 1 FACADE
GRAPHIC SCALE
21-23 THAMES STREET
NEW YORK, NY
ASBESTOS ABATEMENT
ELEVATIONS PLAN
ASB-5

NYC 9/11 Public Portal Document

Attachment II

NYC 9/11 Public Portal Document

August 3, 2005

Mr. Chris D'Alimonte
New York City Department of Education
Division of School Facilities
44-36 Vernon Boulevard, 5th Floor
Long Island City, NY 11101

Re: 90 & 100 Trinity Place (HS of Economics & Finance)
133-135 Greenwich Street & 21-23 Thames Street

Dear Mr. D'Alimonte:

Enclosed is a set of documents outlining a scope of work that calls for temporarily altering existing duct work and fresh air intakes at 90 & 100 Trinity. This plan was deemed acceptable by the Board of Education at an August 3rd meeting with the BOE, Copper Group and Airtek Environmental. The Copper Group has agreed to incur the cost of making these necessary alterations. Please review the scope outlined by Aitrek and the drawing prepared by Eastern Air; should you have any questions please feel free to contact me at 347-643-9960.
Sincerely,

Chanan Rozenbaum
Project Developer

NYC 9/11 Public Portal Document

August 3, 2005

Mr. Rick Landman
New York University
70 Washington Square South, Room 1204
NY, NY 10012

Re: 90 & 100 Trinity Place (HS of Economics & Finance)
133-135 Greenwich Street & 21-23 Thames Street

Dear Mr. Landman:

Enclosed is a set of documents outlining a scope of work that calls for temporarily altering existing duct work and fresh air intakes at 90 & 100 Trinity. This plan was deemed acceptable by the Board of Education at an August 3rd meeting with the BOE, Copper Group and Airtek Environmental. The Copper Group has agreed to incur the cost of making these necessary alterations. Please review the scope outlined by Aitrek and the drawing prepared by Eastern Air; should you have any questions please feel free to contact me at 347-643-9960Sincerely,

Chanan Rozenbaum
Project Developer

NYC 9/11 Public Portal Document

AIRTEK ENVIRONMENTAL CORP.

39 WEST 38TH STREET, 12TH FLOOR, NEW YORK, NY 10018
PHONE (212) 768-0516 FAX (212) 768-0759
WWW.AIRTEKENV.COM

August 3, 2005

Mr. Chris D'Alimonte
New York City Department of Education
Division of School Facilities
44-36 Vernon Boulevard
Long Island City, NY 11101

Re: 90 & 100 Trinity Place (HS of Economics & Finance)
Possible Air Infiltration from the Decontamination & Destruction of
133-135 Greenwich Street and 21-23 Thames Street

Dear Mr. D'Alimonte:

A thorough inspection of the subject structures and the adjacent structures has been conducted on July 6, 2005. Communicating openings, air intakes, and other potential pathways of contamination have been identified for inclusion in the decontamination design. Facility managers for the adjacent structures have been contacted so that engineering controls may be implemented to protect occupants. Of particular concern are air intakes of the school building directly to the east of the project site. These concerns have been addressed cooperatively with the Department of Education.

The Copper Group's Asbestos Contractor will apply a hard barrier (plywood) over the existing 7th floor fresh air intake louver on the West side of 100 Trinity, anchor it to the masonry, and then apply two layers of 6-mil polyethylene sheeting over the hard barrier. Since the fresh air intake louver will be covered, three (3) windows, in areas not occupied by students, on the 8th floor (i.e. kitchen), will be opened to allow fresh air to penetrate the 8th floor. The air from the opened windows on the 8th floor will go thru a dropped ceiling which is the return air plenum for the 7th floor MER with ducts that lead directly to the two (2) units. This will supply adequate make-up fresh air to the two units.

The Copper Group's Mechanical Contractor will blank off the two fresh air intake ducts attached to the fresh air intake louver (approximately 12" x 6" each) on the 6th floor (Exterior Fresh Air Louver on Thames Street is inaccessible) of 90 Trinity. It is the understanding that the HVAC unit in question is not in operation (has not been in operation for at least three years), and will not be put back into operation. Therefore, no make air is required. The Copper Group's Mechanical Contractor will also provide a temporary extension to the fresh air intake duct (100 Trinity) and extend it towards Cedar Street over the Auditorium Roof.

If you have any questions or require further clarification, please do not hesitate to contact me.

Sincerely,
Airtek Environmental Corp.

Michael Porter

Michael Porter,
Senior Project Manager

Cc: Chanan Rozenbaum, The Copper Group
05-0701

NYC-WTC_000134176

NYC 9/11 Public Portal Document

EASTERN AIR INC.
260 JOHNSON AVENUE, BROOKLYN, NEW YORK 11206 • TEL: (718) 821-3636 • FAX: (718) 821-9104

August 3, 2005

Copper Construction
Jim Pershin
752 Pacific Street
Brooklyn, N.Y. 11238

Re: Roof Duct Work at Greenwich & Thames

Dear Jim,

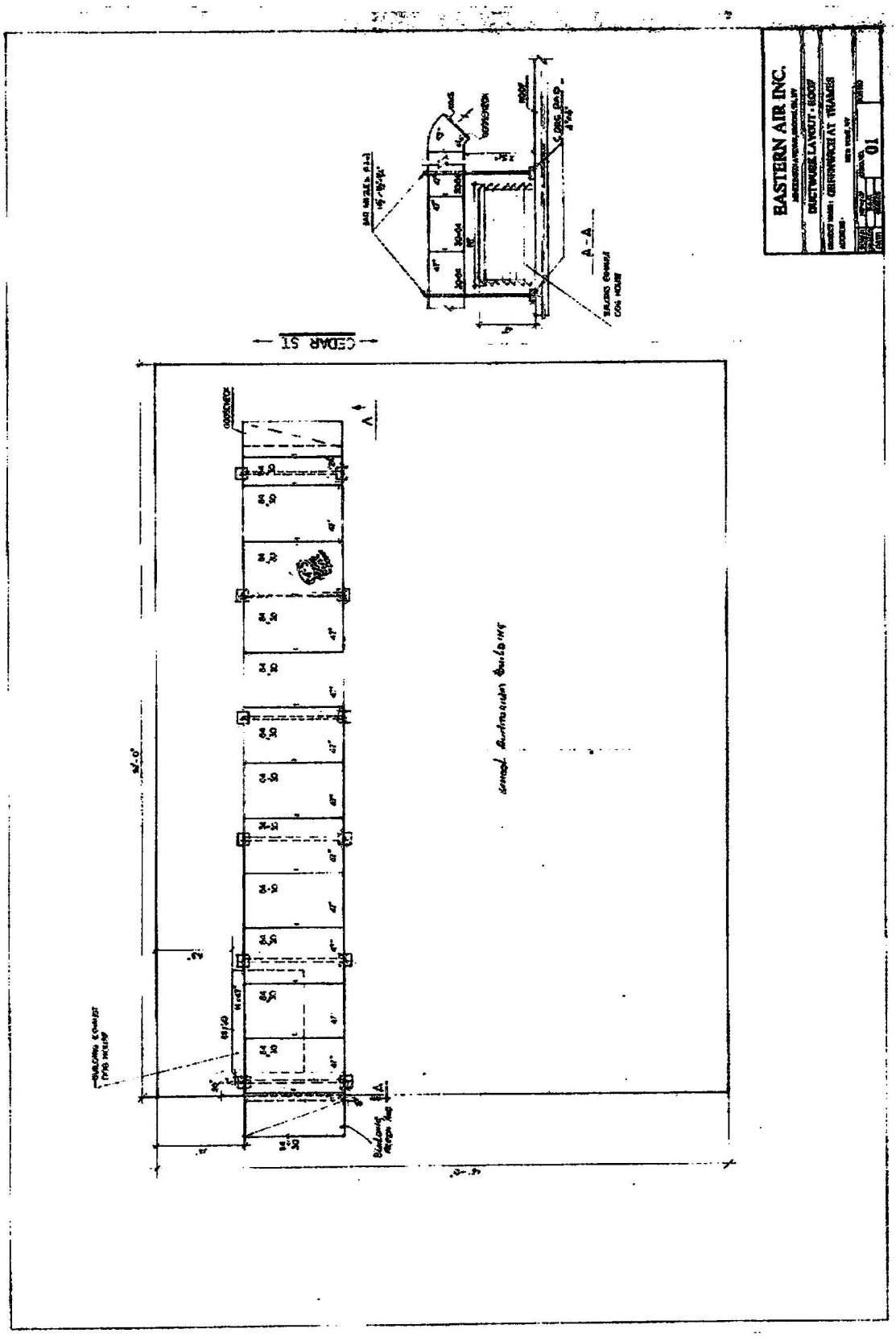
Please find the following drawing for proposed fresh air duct alterations. Also note above mentioned alterations are temporary. The existing duct will be re-installed back to present configuration.

Please see additional specifications attached.

Sincerely,

Ilya Meshchaninov
Easteren Air Inc.

NYC-WTC_000134177


EASTERN AIR INC.
CEDAR ST
A - A

NYC 9/11 Public Portal Document

Part I

Revised Work Plan for Abatement and Demolition of 133-135 Greenwich Street and 21-23 Thames Street

Prepared for:

The Greenwich Street Project, LLC
666 Fifth Avenue
New York, New York

Prepared by:

Airtek Environmental Corp.
39 West 38th Street
New York, NY 10018

212-768-0516

Original Submittal: June 9, 2005
Comments June 29, 2005
Re-submittal June 30, 2005
Additional Comments August 4, 2005
Re-Submittal August 11, 2005
Additional Comments September 13, 2005
Resubmittal September 16, 2005

NYC 9/11 Public Portal Document

1.0 General

The Copper Group, Inc. has engaged Airtek Environmental Corp. (Airtek) to prepare the following project plan in support of the de-construction of the buildings located at 133-135 Greenwich Street and 21-23 Thames Street, New York, NY. This plan is in response to a request by the WTC Regulators for a documented approach to the project.

Though it ~~sustained~~ was sustained little physical damage, the buildings at 133-135 Greenwich Street and 21-23 Thames Street were impacted ~~in places~~ by fallout from the events of September 11, 2001. It is the Owner's intent to conduct abatement of in-place asbestos, and to effect a decontamination of the interior of the building so that conventional demolition activities can be completed.

2.0 Related Submittals

2.1 Community Air Monitoring Plan

Prior to initiation of any decontamination/deconstruction operations, an Environmental Community Air Monitoring Plan (ECAMP) developed by an Airtek CIH, and approved by the USEPA will be established and operational. The Program will consist of daily air monitoring at three points on the perimeter of the project site. Monitoring will be conducted in accordance with the attached Environmental Air Monitoring Specification, Community Monitoring will continue until building demolition is complete. The ECAMP is included as Part II of the submittal Package.

2.2 Health & Safety Plan

A Certified Industrial Hygienist (CIH) from Airtek has developed a site-specific HASP to be applied to all site decontamination operations. The HASP details requirements for access/egress and requirements for Personal Protective Equipment for workers at the site. The HASP is included as Part III of the submittal package.

2.3 Waste Management Plan

A Certified Industrial Hygienist (CIH) from Airtek has developed a site-specific Waste Management Plan (WMP) to be applied to all waste operations for the site. The WMP provides details on how, and by whom, waste determinations and categorizations will be made, and provides detail on sampling and analysis protocols. The WMP is included as Part IV of the submittal package.

3.0 Environmental Regulatory Submittals

3.1 Asbestos Survey

NYC-WTC_000134180

NYC 9/11 Public Portal Document

Airtek has undertaken an asbestos survey intended to coordinate and complete previous survey work that has been conducted at the site. All previous documentation was reviewed and a site survey and bulk sampling ~~was~~ were conducted. Based on this survey work, an inventory of in-place asbestos has been developed. The results of the surveys are included in Attachment I "Variance Application" to this Work Plan.

3.2 Site Survey

A thorough inspection of the subject structures and the adjacent structures has been conducted. Communicating openings, air intakes, and other potential pathways of contamination have been identified for inclusion in the decontamination design. Facility managers for the adjacent structures have been contacted so that engineering controls may be implemented to protect occupants. Of particular concern are air intakes of the school building directly to the east of the project site. These concerns are being addressed cooperatively with the Department of Education. Details on these plans are included in Attachment II "Mechanical Controls" to this work plan.

3.3 NYC DEP Variance Application

In order to execute the particular requirements of this unique project, specific relief from RCNY Title 15 will be requested by the submittal to NYC DEP of an ACP-7 form with an accompanying ACP-8 Request for Variance form for each of the two structures involved in the project. Variances to be requested will be specific to the conditions in each building, and the variance request will also include the use of Attachment DW (Waste decontamination in Personnel Decon) during the initial lobby-cleaning phase. A copy of the variance request for each building is included in Attachment I "Variance Application."

3.4 NYS DOL Notification

Due the fact that the decontamination will constitute a 'Large Project" according to Industrial Code Rule #56, notification of the project will be made to the NYS Department of Labor. A copy of the DOSH-486 form is included in Attachment I.

3.5 USEPA Notification

Due the fact that the decontamination will constitute a 'Large Project" according to EPA NESHAP, notification of the project will be made to the USEPA. A copy of the USEPA notification is attached. In addition, if it is determine that greater than 100 kg of Hazardous Waste is to be generated in any one month from this site, RCRA notification will be required.

4.0 Utilities - General:

NYC-WTC_000134181

NYC 9/11 Public Portal Document

Utility service is currently cut off to the building. All electricity and water required for the work will be drawn from sources outside the building.

5.0 Monitoring:

Community Monitoring will be conducted as detailed in submittal Part II – ECAMP.

Project Monitoring: Throughout the decontamination activities, project air monitoring will be conducted in addition to the ~~Perimeter~~ Community Monitoring described above. Project Monitoring will be conducted in strict accordance with RCNY Title 15 Chapter 1, Section 1-41 to 1-45, ~~with the exception that~~ all sample analyses will be by TEM. Project monitoring is detailed in submittal Part II - ECAMP. and the provisions set forth in the variance application.

Clearance Testing will be conducted as detailed in the "Clearance Criteria" section below, and as detailed in submittal Part II – ECAMP.

6.0 Clearance Criteria:

The site will be considered ready for the Conventional Building Demolition Phase when the buildings are visually clean of all dust, all interior surfaces have been encapsulated with a colored encapsulant, and when interior air clearance testing indicates that concentrations of the analytes listed below have been reduced to levels specified below. All visual clearance and air testing will be conducted by the environmental consultant. Where necessary a "White Glove Test" will be performed to determine visual clearance. ?

The buildings can be removed from containment and the abatement phase will be completed when area air measurements, performed using aggressive air sampling procedures which re-suspend residual settled dusts, are at or below each of the following airborne concentrations in every sample, respectively for the metals noted below and for asbestos. Air testing for asbestos shall be in accordance with applicable regulations and applicable permits and variances for this project. If any one sample is above any of these limits, then the abatement phase will be considered incomplete, and the effected areas shall be re-cleaned and re-tested until the airborne concentrations are at or below the levels noted for metals and asbestos.

Clearance testing for asbestos will be conducted by floor, and will be acceptable when all samples for a given floor area meet the 70 structures per square millimeter TEM standard. Clearance testing for metals will be acceptable when all samples meet the following criteria:

Asbestos 5 samples per floor

Antimony	250 ug/m3
Barium	250 ug/m3
Beryllium	1.0 ug/m3
Cadmium	5.0 ug/m3
Chromium (III)	250 ug/m3
Copper	500 ug/m3

NYC-WTC_000134182

NYC 9/11 Public Portal Document

Lead	25 ug/m3
Manganese	100 ug/m3
Mercury	12.5 ug/m3
Nickel	50 ug/m3
Zinc	1,000 ug/m3

each building one work area

stairwells -

5 inside work area (IWA) samples will be collected form each floor. 5 outside work area (OWA) for ACM will be collected from areas outside each floor (roof, exterior, previously cleared floors, etc.) of the subject buildings. In addition, 5 IWA samples for metals will be collected form each floor. All samples will be collected using aggressive sampling techniques. Upon completion of clearance sampling on the top floor, the floor will be sealed off, and sampling of the next floor down will commence. Details on sampling methodologies are included in the ECAMP document (submittal Part II).

instead of aggressive - specify compliance with Title clearance sampling methods

5 samples per floor.

7.0 Abatement Phase

7.1 Part I - Exterior Cleaning:

The exterior of the building was decontaminated as a part of the NYC DEP Building Exterior Cleaning Program following 9/11/01. Airtek's visual inspection of the façade indicates that it is advisable to conduct low-pressure power washing prior to initializing demolition activities. The exterior of the building will be cleaned in accordance with the NYC DEP WTC Dust/Residue Roof & Façade Cleaning Procedures included in Attachment I.

Building façade clean-up via low pressure washing:

and at the building line

1. At grade level, a work place/restricted area shall be established. This area shall be plasticized with one (1) layer of 6-mil plastic from one (1) foot up the building exterior wall to the edge of the sidewalk. At the edge of the sidewalk, wood shall be placed under the plastic to create a large catch basin for the water run-off. It shall be cordoned off with clearly identifiable asbestos hazard tape.

Roof?

2. A low pressure washing technique, moving from top to bottom, shall be employed to minimize water bounce-back. The façade shall be washed with a low pressure wash not to exceed 250 psi.

Surface access by boom lift

3. The collected water run-off shall be pumped to 55-gallon drums. Aliquots from each drum of wash water will be collected. For each day of work, the aliquots will be composited into one sample to be analyzed for Full TCLP and RCRA characteristics. If the water is not regulated under RCRA, it will be filtered through a 5 micron filter prior to disposal to the NYC sewer system per NYC Title 15, Part 1-82 (b) 1. If testing indicates the water is regulated under RCRA, it will be handled, package, stored and disposed in strict accordance with its categorization.

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Asbestos Rules and approval

make-up air?

7.2 Part II - Soft Strip:

The Soft-Strip will be conducted in negative air full-containment as an asbestos project according to the NYC DEP Variance for the project. Each building will be contained as one work area. Stairwells will not be contained and/or cleared separately. As noted in Section 6.0 "Clearance Criteria," each floor will be sampled individually and sealed at the stairwell upon completion of sampling. Sampling will then move sequentially down through the buildings from top to bottom. Dust suppression will be conducted according to the stringent rules and regulations governing asbestos projects. Exterior isolation barriers will be installed per the NYC DEP Variance.

when will each portion of stairwell be cleared. These issues need to be addressed more clearly in 6.0.

All interior materials, including moveable objects, will be subject to abatement and removal, and will be bagged and disposed of as ACM waste at a minimum. Certain stainless steel kitchen fixtures and other impermeable materials may be decontaminated by HEPA-vacuum and wet wiping. Efficacy of this decontamination will be determined by the Environmental Consultant as described in the Waste Management Plan (Submittal Part IV). All ceiling systems (plaster, tiles, sheetrock, etc.), wall systems (plaster, wall board, etc.), and floor systems, (tiles, carpet, etc.) will be removed and bagged for disposal as ACM waste at a minimum. Waste characterization testing as described in the WMP (submittal Part IV) will be used to make final waste determinations. Remaining structural members will be wet-wiped, HEPA vacuumed, and encapsulated with a penetrating encapsulant. All interstitial spaces (i.e., chases, stud walls, etc.) will be accessed, wet-wiped, HEPA-vacuumed, and encapsulated. Operable windows will be articulated, wet wiped, HEPA-vacuumed, and encapsulated.

Following Part II and Part III, building will be turned over

Move to end of Part III

Following 2nd and 3rd cleanings and the settling periods, final air testing will be conducted as detailed in "Clearance Criteria" above. Upon successful clearance air testing, the building will be turned over to the demolition contractor for conventional demolition.

manometer location readings

7.3 Part III - In Place ACM:

In-place ACM has been identified as follows:

133-135 Greenwich Street:

a. Roof Flashing – 35sf
b. Bulkhead Tar – 10sf

21-23 Thames Street:

a. Roof Membrane – 350sf
b. Flashing – 100sf

these quantities don't match ACP7 quantities.

NYC-WTC_000134184

NYC 9/11 Public Portal Document

c. Tar – ~~20sf~~ 470
d. Window Caulk – 9sf 10
e. Coping Stone Caulk – 1sf 1
f. Pipe Insulation – 50 lf 57

not a method on the AC97 line 29.

Per the requirements of the NYCDEP, these materials will be abated last in the decontamination sequence. As such, care will be taken to protect these materials from disturbance and/or damage during the soft-strip phase. Pipe insulation will be removed by NYC DEP Glovebag Procedures. For detailed information on the asbestos survey conducted, please refer to the Airtek Asbestos Survey Reports dated May 31, 2005 (Attachment I).

7.4 Structural Framing/Masonry Façade

Due to the impossibility of removing structural framing without the risk of building collapse, all structural framing, and exposed masonry façade will be wet-wiped, HEPA vacuumed, and encapsulated with penetrating encapsulant. Prior to commencement of conventional demolition, the remaining building components (anticipated to be principally wood framing and masonry façade) will be tested by the Environmental Consultant for ACM content and RCRA characteristics, as noted in the WMP (Part IV of the submittal). These materials will be handled and disposed of as appropriate based on the test results.

8.0 Conventional Building Demolition:

8.1 Permits:

Contractor will obtain all governmental permits necessary to perform the work including, but not limited to sidewalk bridges, D.O.T., etc.

Contractor will comply with requirements of all city, state or federal agencies (including OSHA) relating to the demolition work. ~~Contractor will comply with all provisions of the New York City Building Code~~. Redundant

8.2 Dust Suppression:

The Contractor will be responsible to take precautions to prevent fugitive dust from escaping the site. As noted in the Project HASP, the Contractor has the responsibility to monitor for visible emissions. Dust suppression engineering controls will be the responsibility of the Contractor, and may include, but not be limited to the following:

Wet suppression: The use of water and/or amended water
Site housekeeping via vacuuming/sweeping
Limitation of free-fall of demolition debris
Limitation of freefall during waste loading

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Sealed and/or covered transport

The listed controls are intended as a guideline. It is the responsibility of the Contractor to implement whatever engineering control is required (whether above-listed or not) to prevent fugitive dust.

Failure to suppress dust that results in visible fugitive emissions from the site will result in a work stoppage. Work will not be re-started until adequate corrective measures have been implemented to the satisfaction of the Site Hygienist. The procedures to be followed with regards to visible emissions are specified in the ECAMP (Part II of the Submittal).

8.3 Site Protection:

A sidewalk bridge exists along Greenwich and Thames Streets and will remain in place for the duration of Contractor's work. The sidewalk bridges have been installed and are maintained by the LMDC, not the owner of the site. Contractor is responsible to protect the sidewalk bridge during demolition. In the event a portion or section of the bridge needs to be removed and/or relocated, contractor will coordinate this work with the ~~owner~~. LMDC?

The Contractor will be responsible for all temporary protection to any adjacent buildings and/or lots. Contractor will include roof top protection, sidewalk bridges as required to perform this work.

Contractor will maintain the project site, adjacent sidewalks and streets free from debris and garbage, including daily sweeping of sidewalks for the duration of contractor's work.

Contractor will provide and maintain a plywood fence along Greenwich and Thames Streets with gates along the front and side of the property. All work to be coordinated with NYC DOB temporary fence permit. Upon completion of the Contractor's work, the fence and gates will be left in an acceptable condition, with gates in locations approved by, and coordinated with, the General Contractor. General Contractor will obtain fence permit(s) and maintain permit(s) for the duration of the project. Fence will comply with NYC Department of Building requirements and will be constructed of minimum 5/8" exterior grade plywood (good one side) on two by four frames. Fence will be painted Dark Blue and will have "Post No Bills" painted a maximum of 10 feet on center. Fence will be constructed with wood or metal posts at regular intervals. Post will be sunk into the ground as required to make them free standing without bracing or outriggers. Fence will be constructed such that sections of it are easily removable without disturbing remaining sections. Blind spots will not be created on sidewalk.

?

8.4 Waste Management – Conventional Demolition:

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Conventional demolition will involve only the remaining wood structure and masonry exterior of the buildings. As detailed in the WMP (submittal Part IV), representative waste will be collected by the Environmental Consultant for analysis by Full TCLP and RCRA characteristics. Based on the results of TCLP testing, the waste will be characterized according to any RCRA exceedances. Disposal will be only to facilities licensed to accept the waste so characterized.

Transportation and Disposal will be as described in Section IV of the Submittal, "Waste Management Plan" Sections 9, 10 & 11. Records of hazardous waste determinations and hazardous waste manifests will be retained for a period of at least three years from the completion of the project.

USEPA is this sufficient?

8.5 Site Work:

Contractor will perform proper dust control during any demolition or removal work. The procedures to be followed with regards to visible emissions are specified in the ECAMP.

The Contractor will comply with all federal and local laws regarding noise control.

All work will be done by appropriately qualified labor. The Contractor will be responsible for employing qualified tradesmen for the duration of Contractor's contract work on this project.

All work is to be performed in accordance with the latest standards as established by OSHA.

WAS P.E. evaluation examination of shared wall @ 120 Cedar St. performed? ARE RESULTS AVAILABLE

Demolition of a 2-story brick structure, and 5-story brick structure:

a. All existing interior garbage, furniture, fixtures, equipment and surfacing materials (plaster/wallboard/ceiling systems, etc.) will have been removed under Section 7.0 above.
b. Complete demolition of above grade structures and ground level framing. Existing foundation wall, vaults and sidewalk will remain.
c. Remaining exposed cellar slab will be left free from demolition debris.
d. All utilities serving the buildings ~~will be~~ shall be disconnected as required before any removal and/or demolition is started. ← PREVIOUSLY STATED ALL UTILITIES ALREADY DISCONNECTED. ALSO IN VARIANCE APPLICATION. utilities currently cut off.
e. Obtain and secure all required permits to complete demolition work, including but not limited to demolition permit, fence permit, sidewalk closing permit, etc. Cost for obtaining permits is the responsibility of this trade contractor.
f. Upon completion of demolition work, demolition contractor will provide a "berm" along the foundation walls around the perimeter of the site. The berm will be used to temporarily support the foundation walls until the excavation / foundation contractor starts work. The berm will be set on a 45 degree angle and start from the top of existing foundation wall to the cellar slab,

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End

NYC-WTC_000134188

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Attachment I

Variance Application

NYC-WTC_000134189

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AIRTEK ENVIRONMENTAL CORP.

39 WEST 38TH STREET, 12TH FLOOR, NEW YORK, NY 10018
PHONE (212) 768-0516 FAX (212) 768-0759
WWW.AIRTEKENV.COM

August 11, 2005

Mr. Rajappan Radhakrishnan, Director
New York City Department of Environmental Protection
Bureau of Air, Noise and Hazardous Materials
59-17 Junction Blvd., 8th Floor
Jamaica, NY 11373

Re: Variance Request – 133-135 Greenwich Street
Building Decontamination and De-construction

Dear Mr. Radhakrishnan:

The Copper Group, Inc. has engaged Airtek Environmental Corp. (Airtek) to prepare the following Variance Request in support of the decontamination and de-construction of the building located at 133-135 Greenwich Street, New York, NY.

Though it sustained little physical damage, the building at 133-135 Greenwich Street was impacted in places by fallout from the events of September 11, 2001. It is the Owner's intent to conduct abatement of in-place asbestos, and to effect a decontamination of the interior of the building so that conventional demolition activities can be completed.

Asbestos Survey:

Airtek has undertaken an asbestos survey intended to coordinate and complete previous survey work that has been conducted at the site. All previous documentation was reviewed and a site survey and bulk sampling was conducted. Based on this survey work, an inventory of in-place asbestos has been developed. The results of this survey are attached.

Health & Safety Plan:

A Certified Industrial Hygienist (CIH) from Airtek has developed a site-specific HASP to be applied to all site decontamination operations. The HASP details requirements for access/egress and requirements for Personal Protective Equipment for workers at the site. The HASP is attached.

NYC DEP Variance Application:

In order to execute the particular requirements of this unique project, specific relief from RCNY Title 15 is requested as follows:

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Exterior:

We are requesting a variance from the following subsections to facilitate the decontamination of the facade:

Section 1-81(j)	No pre-cleaning of the work area(s)
Section 1-81(m)	Partial plasticization of the work area(s)
Section 1-82(a) & 1-83(a)	Remote decontamination facilities
Section 1-91	No negative air
Section 1-112(d) & 1-112(e)	No 1st & 2nd settling period and no 2nd & 3rd cleaning

Roof?

The exterior of the building was decontaminated as a part of the NYC DEP Building Exterior Cleaning Program following 9/11/01. Airtek's visual inspection of the façade indicates that it is advisable to conduct low-pressure power washing prior to ~~initiating~~ initiating demolition activities. The exterior of the building will be cleaned in accordance with the NYC DEP WTC Dust/Residue Roof & Façade Cleaning Procedures.. and the procedures referenced in Part I. Revised Work Plan for Abatement and

Interior: Demolition of 133-135 Greenwich St and 21-23 Thames Street.

Phase 1 – Soft Strip:

We are requesting a variance from the following subsections:

Section 1-125(i) Isolation Barriers

We request relief from 1-125(i): Isolation Barriers. It is the intent of the project to seal all windows and communicating openings to the outside of the building from the outside with two layers of 6-mil poly and plywood barriers. The intent of this action is to create a sealed structure that will allow decontamination activities within the building while reducing the possibility of migration of dust to the outside of the structure.

All interior materials, including moveable objects, will be subject to decontamination and removal or, if porous, will be bagged and disposed of as ACM waste. All ceiling systems (plaster, tiles, sheetrock, etc.), wall systems (plaster, wall board, etc.), and floor systems, (tiles, carpet, etc.) will be removed and bagged for disposal as ACM waste. Remaining structural members, pipes, boiler, freezer boxes and roof mounted HVAC units will be wet-wiped, HEPA vacuumed, and encapsulated with a penetrating encapsulant. All ~~accessible~~ interstitial spaces will be wet-wiped, HEPA-vacuumed, and encapsulated. Operable windows will be articulated, wet wiped, HEPA-vacuumed, and encapsulated. Full worker and waste decontamination facilities will be attached to the entrance on Thames Street. The decontamination facilities will comply with NYC DEP Title 15 §1-82 & §1-83.

at a minimum

at a minimum

Additional waste characterization will be performed in accordance with Part IV. Waste Management Plan.

Ref. P4 - Attachment IV to be used during the initial lobby-cleaning phase. Needs to be in the application. ∴ Need §1-83 Δ or resolution of discrepancy.

Phase II - In Place Exterior ACM:

We are requesting a variance from the following subsections for the roofing materials:

Section 1-41(c)	During abatement air sampling inside the work area to be performed instead of outside
Section 1-41(d)	No post abatement clearance air monitoring
Section 1-102(b)	Not to fully saturate ACRM with amended water. Use of foam.

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We proposed to use Attachment FR - Procedures for use of Foam or Similar Viscous Liquid in Removal of Asbestos Containing Roofing (ACRM) in New York City.

In-place ACM has been identified as follows:

1. Bulkhead Tar – 10 sf
2. Roof Flashing – 35 sf

These materials will be abated last in the decontamination sequence. For detailed information on the asbestos survey conducted, please refer to the Airtek Asbestos Survey Report dated May 31, 2005 (Attached).

In addition to the conditions set forth in F.R. E6, ~~the vents~~ arrangements have been made to seal openings at the HS. of Economics & Finance. at the start of this project. Refer ~~Please~~ to the workplan for the details.

Utilities - General:

Utility service is currently cut off to the building. All electricity and water required for the work will be drawn from sources outside the building.

Project Monitoring:

Project Monitoring: Throughout the decontamination activities, project air monitoring will be conducted in addition to the Perimeter Monitoring described above. Project Monitoring will be conducted in strict accordance with RCNY Title 15 Chapter 1, Section 1-41 to 1-45, ~~with the exception that~~ all sample analyses will be by TEM. and approved variance application

Clearance Testing: Aggressive area clearance testing for asbestos will be conducted for all work areas by TEM. ~~Aggressive clearance testing for metals will be conducted~~ by ~~NIOSH 7300~~.

Clearance Criteria:

Clearance testing for asbestos will be acceptable when all samples for a given work area meet the 70 structures per square millimeter TEM standard. ~~Clearance testing for~~ metals ~~will be acceptable when all samples meet the following criteria~~:

Antimony	250 ug/m3
Barium	250 ug/m3
Beryllium	1.0 ug/m3
Cadmium	5.0 ug/m3
Chromium (III)	250 ug/m3
Copper	500 ug/m3
Lead	25 ug/m3
Manganese	100 ug/m3
Mercury	12.5 ug/m3
Nickel	50 ug/m3
Zinc	1,000 ug/m3

Additional clearance sampling shall be performed as specified in the work Plan. ~~for~~

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Structural Framing:

Due to the impossibility of removing structural framing without the risk of building collapse, all structural framing will be wet-wiped, HEPA vacuumed, and encapsulated with penetrating encapsulant. As a part of the conventional demolition that will follow the decontamination, these materials will be characterized for asbestos content and RCRA characteristics, and will be disposed of as appropriate based on the test results.

Thank you for your time and consideration,

Sincerely,

Michael Porter

Michael Porter
Senior Project Manager

MP:mtf

7624206030

NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
Asbestos Control Program
59-17 Junction Boulevard, 5th Floor, Flushing, NY 11373-5108

ONLY TYPEWRITTEN FORMS WILL BE ACCEPTED

DEP

ASBESTOS PROJECT NOTIFICATION
(ASBESTOS INSPECTION REPORT)

Building Dept. [illegible] For OFFICIAL USE ONLY

When submitting this form at the NYC Department of Buildings, the original form and three (3) copies with original signatures are required. Submittal at the NYCDEP requires one copy of the form with original signatures. This form must be submitted to the NYC DEP not less than one week in advance of the start of abatement activities.

1. $1200 (See fee schedule)

I. FACILITY

2. Address 133 (Premise #) Greenwich Street (Street Name) Borough Manhattan Zip 10006

AKA 25-29 Thames Street 3. Block 52 4. Lot 8

5. Type of Facility Commercial 6. Name of Building

II. BUILDING OWNER

7. Name Greenwich Street Project, LLC. 8. Contact Person Chanan Rozenbaum

9. Tel. # (347) 643-9960 Fax # (212) 208-4614

10. Address 666 Fifth Avenue City New York State NY Zip 10103

III. GENERAL CONTRACTOR

11. Name Tel. #

IV. ASBESTOS ABATEMENT CONTRACTOR

12. Name Hazardous Elimination Corp. 13. Contact Person Ernie Carranza

14. Federal Employer ID. # PII 15. Tel. # (631) 752-2898 Fax # (631) 752-2910

16. Address 195 H Central Avenue City Farmingdale State NY Zip 11735

V. THIRD PARTY AIR MONITOR

17. Name Airtek Environmental Corp. 18. Contact Person Benn Lewis

19. Federal Employer ID. # PII 20. Tel. # (212) 768-0516 Fax # (212) 768-0759

21. Address 39 West 38th Street City New York State NY Zip 10018

22. Sample Analysis Laboratory Airtek / ATC Associates 23. NYS DOH ELAP # 11040/10879

VI. PROJECT INFORMATION

24. Starting date for this portion of work _____ Projected completion date _____

Asbestos work schedule: ☑ Monday ☑ Tuesday ☑ Wednesday ☑ Thursday ☑ Friday ☑ Saturday ☑ Sunday

Shift From: _____ ☐ am ☐ pm to _____ ☐ am ☐ pm

If other, specify _____

Access to inspect the premises must be provided during the work schedule indicated in this item.

25. Total amount of asbestos-containing material to be abated during this work

42,423 Square Feet, and/or 0 Linear Feet

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6426206039 **ASBESTOS INSPECTION REPORT (continued)**

26. Asbestos Hauler DJM Co. Inc. NYS DEC Permit # NJ-344 Tel.# (973) 491-0006

Disposal Site(s) Meadowfill Landfill, Bridgeport WV & Cumberland Landfill Shippberg, PA

27. This asbestos abatement is part of a (Item a through e requires filing of this form with the NYC Department of Buildings)

a) ☑ Demolition b) ☐ Boiler Replacement c) ☐ Sprinkler Replacement d) ☐ Renovation/Alteration

e) ☐ Fireproofing Replacement f) ☑ Other (Describe) Asbestos Abatement/WTC Dust Remediation

28. TYPE OF ABATEMENT (Check all appropriate boxes)

☑ Removal ☐ Enclosure ☐ Encapsulation ☐ Repair ☐ Clean up

29 ABATEMENT PROCEDURE (Check all appropriate boxes)

☑ Full Containment ☐ Glovebag ☐ Tent ☑ DEP Variance Application

30.LOCATIONS OF ABATEMENT

Floor(s)	SECTION OF FLOOR (e.g. entire east wing, room #, boiler room, lobby, etc.)	AFFECTED SURFACES CONTAINING ACM (e.g. Pipe lagging, ceiling, plenum duct, storage tanks, decking, etc.)	AMOUNT OF ACM SQUARE FEET	AMOUNT OF ACM LINEAR FEET	DESCRIPTION OF WORK BEING PERFORMED (e.g. running cable, installing fire sprinklers removing and replacing boilers, etc.)
Bsmt	Entire	WTC Dust	12,000		Sub-Chapter G
1	Entire	WTC Dust	12,000		Sub-Chapter G
2	Entire	WTC Dust	12,000		Sub-Chapter G
Roof	Entire	Flashing	35		Asbestos Abatement
Roof	Bulkhead	Tar	10		Asbestos Abatement
B-2, (R)	Facade	WTC Dust	6,378		WTC "Bldg Ext. Cleanup"
↓	Roof ?	WTC Dust ?	?		WTC Bldg Ext. Cleanup.

Additional pages attached ☐

31 I hereby declare that the information pevided herein is true and complete to the best of my knowledge. I am familiar with Federal, State and NYC laws and regulations applicable to asbestos related work.

Airtek Environmental	Hazardous Elimination	Airtek Environmental
Print Name of Air Monitor	Print Name of Asbestos Contractor	Print Name of Applicant
Signature	Signature	Signature
Date	Date	Date

32. I understand that as the owner of a building where asbestos abatement activity occurs, I am responsible for the performance of the asbestos abatement activities in accordance with the Asbestos Control Program Rules. I have contracted the third party air monitor who is completely independent of all parties involved in the asbestos project. I hereby declare that I have authorized the filing of this notification for the work specified herein.

Greenwich Street Project, LLC. _____ _____

Print Name of Owner Signature Date

A STAMPED COPY OF THIS FORM INCLUDING AMENDMENTS MUST BE AVAILABLE AT THE WORK SITE.

Any modification of information provided on this form must be reported immediately in writing directly to the NYC DEP ACP.

The requirements of the Asbestos Control Program Rules may not be lawfully avoided or lessened through the performance of work in incremental or piecemeal fashion

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NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
Asbestos Control Program
59-17 Junction Boulevard, 8th Floor, Corona, NY 11368-5107

Asbestos Variance Application

ONLY TYPEWRITTEN FORMS WILL BE ACCEPTED

FOR OFFICIAL USE ONLY
Variance #_____
Fee Paid _____
Notification #_____

I. FACILITY

Address 133-135 Greenwich Street Borough Manhattan Zip 10006

Application must be made at least 2 weeks prior to the start of work.

II. APPLICANT

Name Airtek Environmental Corp. Tel # (212) 768-0516

Address 39 West 38th Street City New York State NY Zip 10018

Capacity: ☐ Contractor ☑ Consultant ☐ Owner ☐ Other_____ Contact Person Benn Lewis

III. SPECIFY ALL NYC DEP OR NYS DOL (ICR56) ASBESTOS RULE PROVISIONS FROM WHICH A VARIANCE IS REQUESTED

~~1-41 (c), 1-41(d), 1-81(j), 1-81(m), 1-83(b)2, 1-91, 1-102(b), 1-112(d), 1-112(e), 1-125(l)~~

SPECIFY FLOORS AND/OR AREAS WHERE WORK INVOLVING THIS VARIANCE IS TO OCCUR

~~Basement, 1st, 2nd & Roof~~

REASONS FOR REQUEST AND DESCRIPTION FOR PROPOSED ACTION (Attachment(s) shall be submitted in TRIPLICATE)

Explain why the procedures required by Title 15, Chapter 1 of the Rules of the City of New York (RCNY) and/or Part 56 of Title 12 of New York Codes, Rules and Regulations (Subparts 56-4 through 56-17) cannot be used. (Attach Additional Sheets)

State the alternative procedures that will be employed to satisfy each requirement as modified. (Attach Additional Sheets)

Provide color coded drawings identifying work area(s) and location of decontamination enclosure system(s).

IV. FEE SCHEDULE

Amount of ACM affected by this variance: 42,423 square feet + _____ linear feet = Total Amount of ACM 42,423 feet

	If total amount of ACM is less than 5000 feet:	If total amount of ACM is 5000 feet or more:
Seven day notification period waiver	$300	$400
First sub-section (per category)	$400	$600
Each additional sub-section (per category)	$200	$300
Maximum fee	$1200	$1800

See Section 1-03(e) of the NYCDEP Asbestos Rules for category definitions.

Enter applicable fee based on schedule above Total Fees $_____

V. I hereby declare that the information provided herein and in any and all accompanying attachments is true and complete to the best of my knowledge. I understand that failure to comply with conditions set forth by the Department in an approval of the application shall render this variance null and void.

Greenwich Street Project, LLC.
Print Name of Owner

Airtek Environmental Corp.
Print Name of Applicant (If not owner)

_____ Signature of Owner Date

_____ Signature of Applicant Date

Work involving a variance may not commence prior to the receipt of the Department's approval of the application. Any violation of the terms of any variance issued pursuant to Title 15, Chapter 1 of the RCNY Section 1-03 is considered a violation of the lettered subdivision modified by the variance.

ACP6
2/2001

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A. TYPE OF NOTIFICATION

Check only one type of notification below.

- [x] Initial ..... Complete all sections and submit 10 calendar days prior to starting date.
- [ ] Amended ..... Submit amended notification with all sections completed and amended item(s) circled.
- [ ] Cancelled ..... Complete Section G and attach copy of initial notification or complete all sections.
- [ ] Emergency ..... **You must first call the Program Manager's office of the Asbestos Control Bureau at 518-457-1255 for prior approval of emergency status, then complete and return this form including:**

Date (__/__/__) Time (_____) Emergency Status Granted

Authorized by: _____ (From Asbestos Control Bureau)

B. CONTRACTOR INFORMATION

Provide all information requested below.

1. FEIN: PII

2. Asbestos Lic. No.: 99 - 0148

3. Contractor Name and Address:
Hazardous Elimination Corp
195H Central Avenue
Farmingdale, New York 11735

4. Mailing Address (*if different*):
Same

5. Duly Authorized Representative
Name: Donna Gold
Title: Vice President
Phone No.: (631) 752-2898

6. Will Sub-Contractor(s) be used
[x] No [ ] Yes (*If yes, complete lines below*)
Name _____
Asbestos Lic. No. __ - ____
Name _____
Asbestos Lic. No. __ - ____

7. Party for Whom Work is Being Performed:
Name: The Cooper Group, Inc.
Address: 666 Fifth Avenue, New York, NY 10103

C. PROJECT SITE INFORMATION

Provide all information requested below for the building/site at which the asbestos project will be conducted.

8. Project Location:
County: New York
Name of building: _____
Room or other specific location: Entire Basement, 1st and 2nd floors, roof and B-2 facade
Street address: 133 Greenwich Street aka 25-29 Thames Street
City, town or village: New York, New York 10006

9. Building Information
Current use: Commercial
Building age: _____
Prior Use: Commercial
Building size: _____ sq. ft

10. Building Representative/Site Contact: Name: Chanan Rozenbaum Phone No.: (212 208-4614

83 (10-03)

NYC-WTC_000134197

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D. PROJECT DETAILS

Provide all information requested below relating to specifics of asbestos removal.

11. Project Dates: Starting date _____ Completion date _____

If amended: Starting date _____ Completion date _____

Is this a phased project: ☑ No ☐ Yes *(If yes, list scope, location, and starting and completion dates for each phase in Section F. Remarks)*

12. Do You Anticipate Doing: ☐ Night work ☐ Weekend work ☑ Shift work
(Provide details in Section F.)

13. Dollar Amount of Contract Between Parties Named in Item 3 and Item 7 $ _____

14. If work is being conducted under a variance, check appropriate box and supply variance number.

☐ Applicable Variance No. _____ ☐ Individual Variance Petition No. _____

15. Asbestos Dissemination Prevention Methods *(use Section F. Remarks, and attach additional sheets if necessary)*

a) Type of equipment & ventilation systems used

Equipment:	Manufacturer:	Model Number:	Quantities:
HEPA Vacuums	N/A	N/A	2
Portable Decon Unit	N/A	N/A	1
Respirators	Various	N/A	8
Negative Air Unit	Various	N/A	1

b) Name of air monitoring firm Airtek Environmental Corp. Asbestos Lic. No. 99 – 0589

c) Laboratory performing the analysis

Name Airtek / ATC Associates ELAP Registration No. 11040 / 10879

16. Type of Asbestos Work *(check all that apply)*

☐ Pipe related ☑ Roofing/flashing ☐ Caulking/mastic ☐ Clean-up
☐ Vessel covering ☐ Siding ☐ VAT ☐ Sprayed-on insulation
☐ Demolition - if site survey was previously submitted, provide Reference No. _____
☑ Other *(specify)* WTC Dust and Tar

17. Type and Amount of Asbestos-Containing Material Involved

Friable linear feet			Friable square feet		42,378
Non-friable linear feet	+		Non-friable square feet	+	45
Total linear feet	=		**Total square feet**	=	42,423

NOTIFICATION OF DEMOLITION AND RENOVATION			
Operator Project #	Postmark	Date Received	Notification

I. TYPE OF NOTIFICATION (O = Original/ R = Revised) : **O**

II. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)

OWNER	**Greenwich Street Project, LLC.**			
Address:	**666 Fifth Ave.**			
City:	**New York**	State:	**NY**	ZIP: **10103**
Contact:	**Chanan Rozenbaum**			Tel: **(347) 643-9960**
REMOVAL CONTRACTOR:				
Owner:	**Hazardous Elimination Corp.**			
Address:	**195 H Central Ave.**			
City:	**Farmingdale**	State:	**NY**	ZIP: **11735**
Contact:	**Donald Gold**			Tel: **631-752-2898**
OTHER OPERATOR:				
Address:				
City:		State:		ZIP:
Contact:				

III.TYPE OF OPERATION (D = Demolition/R = Renovation):

IV. IS ASBESTOS PRESENT? (YES/NO) **Yes**

V. FACILITY DESCRIPTION (Include building name, number, and floor or room number):

Building name:					
Address:	**133 Greenwich St.**				
Address:					
City:	**New York**	State:	**NY**		County: **Manhattan**
Site Location:	**Entire**				
Building Size:	Sq.meter:	SqFt:		# of Floors	Age in Yrs.
Present Use:	**Commercial**			Prior Use: **Same**	

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL:

Bulk Sampling to analyze PLM.

VII. APPROXIMATE OF RACM TO BE REMOVED AND NON-FRIABLE ASBESTOS MATERIAL THAT WILL BE REMOVED. SPECIFY THE AMOUNT OF ASBESTOS BELOW:

	RACM to be Removed	non-friable Asbestos Material to be removed Category I	Category II
Linear feet Cable wrap insulation, cable insulation	**0**		
window caulking/glazing. Transite conduit.			
Surface Area- Square Feet WTC Dust	**36,000**		
Roof flashing/tar, window/coping stone caulk		**45**	
Surface Area- Square Feet Façade WTC Dust	**6,378**		
Volume RACM off Facility Component-Cubic Feet			

VIII. SCHEDULE DATES OF ASBESTOS REMOVAL (MM/DD/YY)	Start:	Completion:
IX. SCHEDULED DATES OF DEMOLITION/RENOVATION: (MM/DD/YY)	Start:	Completion:

NOTIFICATION OF DEMOLITION AND RENOVATION (continued)

X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:

All work to be done in accordance with the applicable New York State Industrial Code Rule 56, NYC-DEP Sub-Chapter G utilizing a site specific variance.

XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:

A HEPA Vacuum shall be kept on site at all times.

WASTE TRANSPORTER #1	**DJM**				
Address:	**109-113 Jacobus Avenue**				
City:	**Kearny**	State:	**NJ**		ZIP: **07032**
Contact:	**Vito Pesce**			Telephone	**201-997-8870**
XIII. WASTE DISPOSAL SITE	**Meadowfill Landfill Corp.**				
Address:	**Rt. 2 Box 68 Dawson Drive**				
City:	**Bridgeport**	State:	**WVA**		ZIP: **26330**
Contact:	**John McGarvey**			Telephone:	**304-842-2784**
XIII. WASTE DISPOSAL SITE	**Cumberland County Landfill**				
Address:	**620 Newville Road**				
City:	**Newburgh**	**State:**	**PA**		**ZIP: 17242**
Contact:				**Telephone:**	
XIII. WASTE DISPOSAL SITE					
Address:					
City:		**State:**			
Contact:				**Telephone:**	

XIV. IF DEMOLITION IS ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW

Name:	Title:
Authority:	
Date if Order (MM/DD/YY):	Date Ordered to Begin (MM/DD/YY)

XV. FOR EMERGENCY RENOVATIONS

Date and Hour of Emergency (MM/DD/YY):

Description of the Sudden , Unexpected Event:

Explanation of How the Event caused Unsafe Conditions or Serious Disruption of Industrial Operation:

XVI. DESCRIPTION OF PROCEDURE TO FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NON-FRIABLE ASBESTOS BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER:

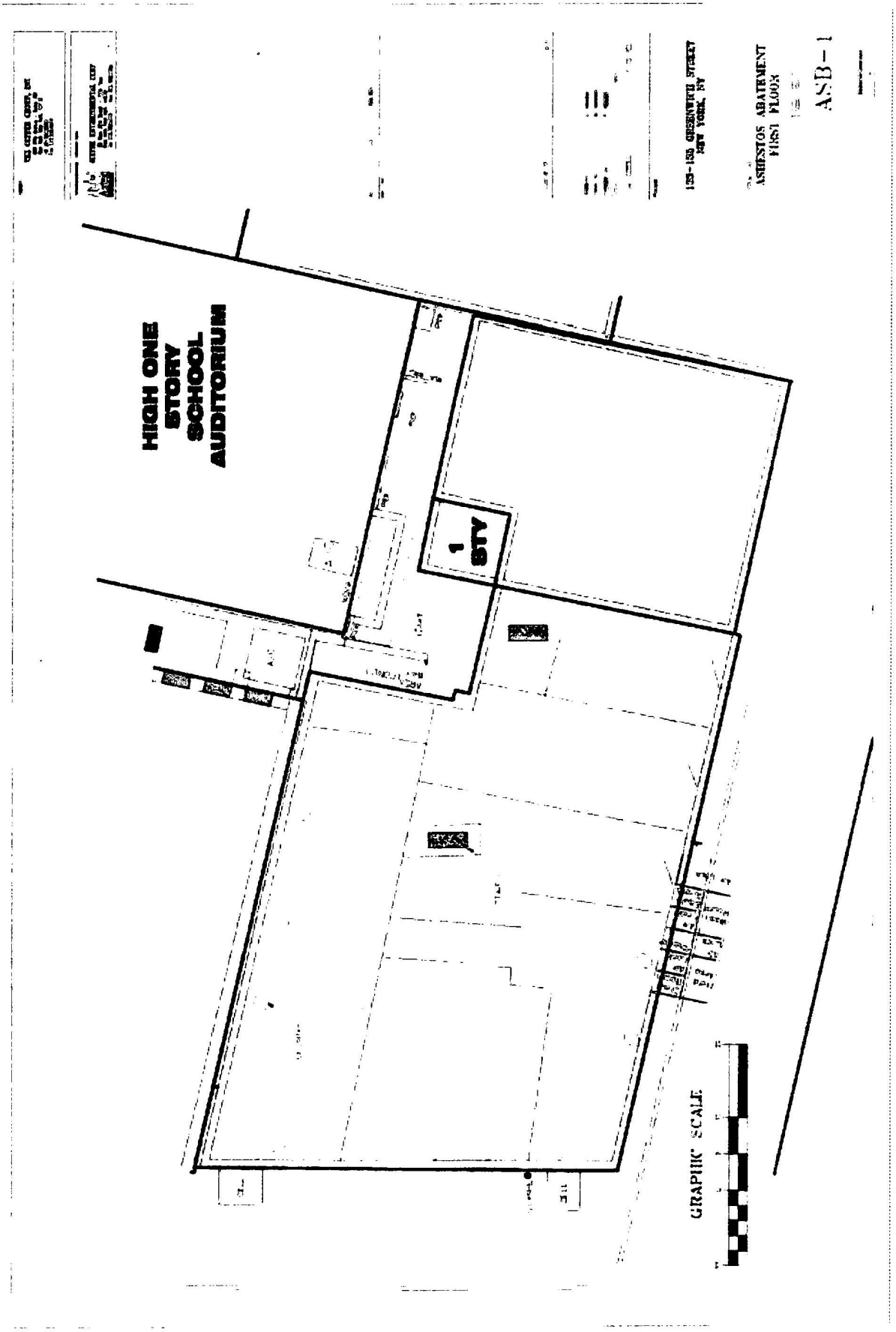
WORK WILL BE STOPPED IMMEDIATELY, NEW ENGINEERING CONTROL AND CLEAN-UP AS PER ICR-56 WILL BE IMPLEMENTED IMMEDIATELY, NEW ABATEMENT METHOD WILL BE EVALUATED TO ADDRESS NEW SITUATION PROPERLY.

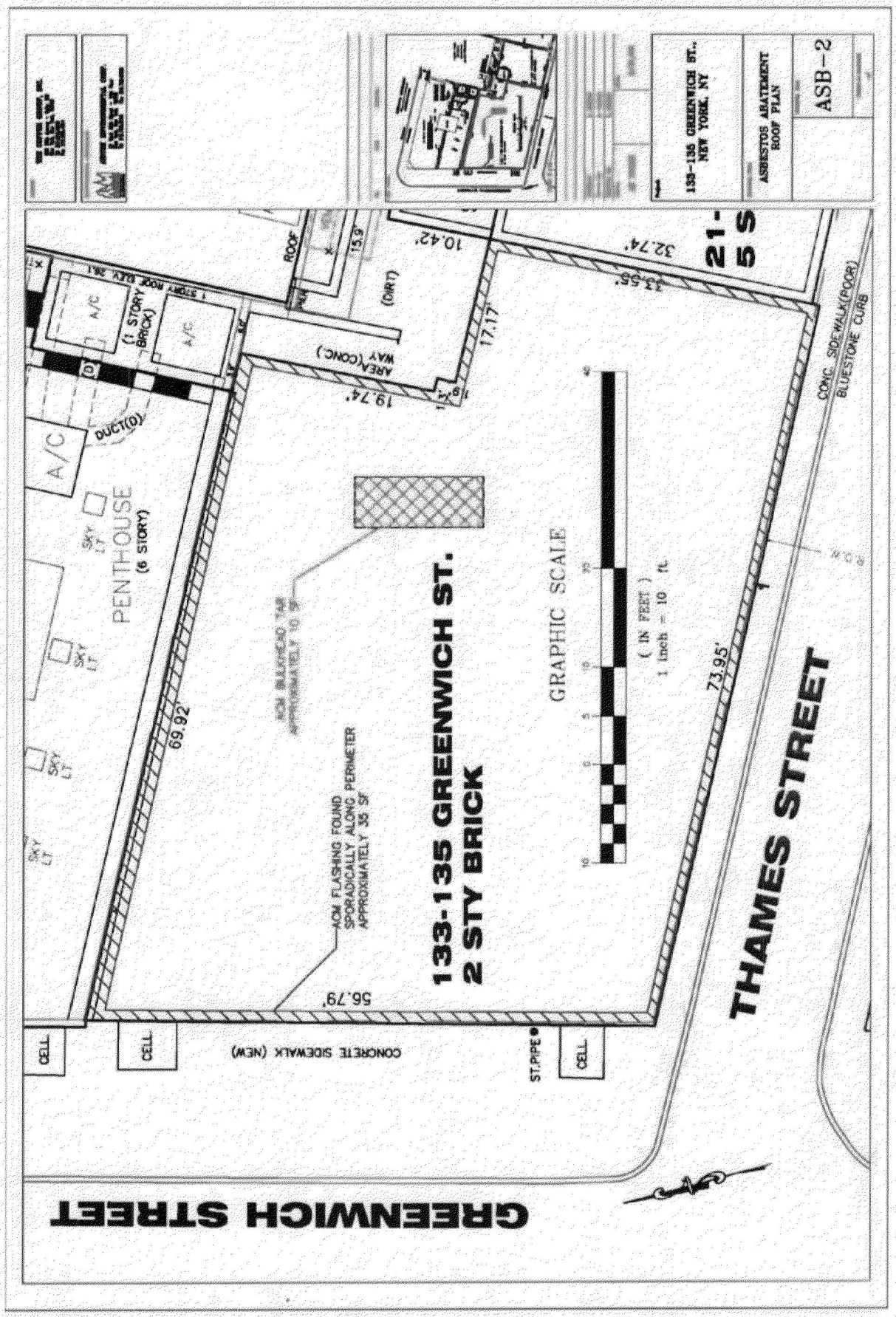
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE REGULATION (40CR PART 61 SUBPART M) WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required 1 year after promulgation).

Signature of Owner /Operator **Date**

XVIII. I CERTIFY THAT THE ABOVE MENTIONED INFORMATION IS CORRECT.

Signature of Owner /Operator **Date**


HIGH ONE STORY SCHOOL AUDITORIUM
1-STY
GRAPHIC SCALE
ASB-1


ASB-2
ASBESTOS ABATEMENT ROOF PLAN
139-135 GREENWICH ST., NEW YORK, NY
133-135 GREENWICH ST.
2 STY BRICK
THAMES STREET
GREENWICH STREET
PENTHOUSE
(6 STORY)
(1 STORY BRICK)
A/C
SKY LT
DUCT(D)
ROOF
AREA (CONC.)
(DIRT)
CONC. SIDEWALK (POOR)
BLUESTONE CURB
CONCRETE SIDEWALK (NEW)
CELL
ST.PIPE
AOM FLASHING FOUND SPORADICALLY ALONG PERIMETER APPROXIMATELY 35 SF
AOM BLUESTONE SAW APPROXIMATELY 10 SF
GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.
69.92'
56.79'
73.95'
19.74'
17.17'
10.42'
32.74'
13.55'
15.9'
21-
5 S

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AIRTEK ENVIRONMENTAL CORP.

39 WEST 38TH STREET, 12TH FLOOR, NEW YORK, NY 10018
PHONE (212) 768-0516 FAX (212) 768-0759
WWW.AIRTEKENV.COM

August 11, 2005

Mr. Rajappan Radhakrishnan, Director
New York City Department of Environmental Protection
Bureau of Air, Noise and Hazardous Materials
59-17 Junction Blvd., 8th Floor
Jamaica, NY 11373

Re: Variance Request – 21-23 Thames Street
Building Decontamination and De-construction

Dear Mr. Radhakrishnan:

The Copper Group, Inc. has engaged Airtek Environmental Corp. (Airtek) to prepare the following Variance Request in support of the decontamination and de-construction of the building located at 21-23 Thames Street, New York, NY.

Though it sustained little physical damage, the building at 21-23 Thames Street was impacted in places by fallout from the events of September 11, 2001. It is the Owner's intent to conduct abatement of in-place asbestos, and to effect a decontamination of the interior of the building so that conventional demolition activities can be completed.

Asbestos Survey:

✓ quantity verification - p 7, 8 of Part 1 discrepancy

Airtek has undertaken an asbestos survey intended to coordinate and complete previous survey work that has been conducted at the site. All previous documentation was reviewed and a site survey and bulk sampling was conducted. Based on this survey work, an inventory of in-place asbestos has been developed. The results of this survey are attached.

Health & Safety Plan:

A Certified Industrial Hygienist (CIH) from Airtek has developed a site-specific HASP to be applied to all site decontamination operations. The HASP details requirements for access/egress and requirements for Personal Protective Equipment for workers at the site. The HASP is attached.

NYC DEP Variance Application:

In order to execute the particular requirements of this unique project, specific relief from RCNY Title 15 is requested as follows:

NYC-WTC_000134203

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NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
Asbestos Control Program
59-17 Junction Boulevard, 8th Floor, Corona, NY 11368-5107

Asbestos Variance Application

ONLY TYPEWRITTEN FORMS WILL BE ACCEPTED

FOR OFFICIAL USE ONLY
Variance #_____
Fee Paid _____
Notification #_____

I. FACILITY

Address 21-23 Thames Street Borough Manhattan Zip 10006

Application must be made at least 2 weeks prior to the start of work.

II. APPLICANT

Name Airtek Environmental Corp. Tel # (212) 768-0516

Address 39 West 38th Street City New York State NY Zip 10018

Capacity: ☐ Contractor ☑ Consultant ☐ Owner ☐ Other_____ Contact Person Benn Lewis

III. SPECIFY ALL NYC DEP OR NYS DOL (ICR56) ASBESTOS RULE PROVISIONS FROM WHICH A VARIANCE IS REQUESTED

~~1-41 (c), 1-41(d), 1-81(j), 1-81(m), 1-82(a), 1-83(a), 1-83(b)2, 1-91, 1-102(b), 1-112(d), 1-112(e), 1-125(l)~~

SPECIFY FLOORS AND/OR AREAS WHERE WORK INVOLVING THIS VARIANCE IS TO OCCUR

~~Basement, 1st, 2nd, 3rd, 4th, 5th & Roof~~

REASONS FOR REQUEST AND DESCRIPTION FOR PROPOSED ACTION (Attachment(s) shall be submitted in TRIPLICATE)

Explain why the procedures required by Title 15, Chapter 1 of the Rules of the City of New York (RCNY) and/or Part 56 of Title 12 of New York Codes, Rules and Regulations (Subparts 56-4 through 56-17) cannot be used. (Attach Additional Sheets)

State the alternative procedures that will be employed to satisfy each requirement as modified. (Attach Additional Sheets)

Provide color coded drawings identifying work area(s) and location of decontamination enclosure system(s).

IV. FEE SCHEDULE

Amount of ACM affected by this variance: 18,322 square feet + 57 linear feet = Total Amount of ACM 18,379 feet

	If total amount of ACM is less than 5000 feet:	If total amount of ACM is 5000 feet or more:
Seven day notification period waiver	$300	$400
First sub-section (per category)	$400	$800
Each additional sub-section (per category)	$200	$300
Maximum fee	$1200	$1600

See Section 1-03(e) of the NYCDEP Asbestos Rules for category definitions.

Enter applicable fee based on schedule above Total Fees $_____

V. I hereby declare that the information provided herein and in any and all accompanying attachments is true and complete to the best of my knowledge. I understand that failure to comply with conditions set forth by the Department in an approval of the application shall render this variance null and void.

Greenwich Street Project, LLC.
Print Name of Owner

Airtek Environmental Corp.
Print Name of Applicant (If not owner)

Signature of Owner Date

Signature of Applicant Date

Work involving a variance may not commence prior to the receipt of the Department's approval of the application. Any violation of the terms of any variance issued pursuant to Title 15, Chapter 1 of the RCNY Section 1-03 is considered a violation of the lettered subdivision modified by the variance.

ACP9
2/2001

NYC-WTC_000134204

NYC 9/11 Public Portal Document

ASBESTOS PROJECT NOTIFICATION

STATE OF NEW YORK
DEPARTMENT OF LABOR

Division of Safety & Health
Asbestos Control Bureau
Building 12, Room 157
State Campus
Albany, NY 12240

A. TYPE OF NOTIFICATION

Check only one type of notification below.

- [x] Initial ..... Complete all sections and submit 10 calendar days prior to starting date.
- [ ] Amended ..... Submit amended notification with all sections completed and amended item(s) circled.
- [ ] Cancelled ..... Complete Section G and attach copy of initial notification or complete all sections.
- [ ] Emergency ..... **You must first call the Program Manager's office of the Asbestos Control Bureau at 518-457-1255 for prior approval of emergency status, then complete and return this form including:**
  Date (___/___/___) Time (_____) Emergency Status Granted
  Authorized by: _____ (From Asbestos Control Bureau)

B. CONTRACTOR INFORMATION

Provide all information requested below.

1. FEIN: PII

2. Asbestos Lic. No.: 99 - 0148

3. Contractor Name and Address:
Hazardous Elimination Corp.
195H Central Avenue
Farmingdale, New York 11735

4. Mailing Address *(if different)*:
Same

5. Duly Authorized Representative
Name: Donald Gold
Title: Vice President
Phone No.: (631) 752-2898

6. Will Sub-Contractor(s) be used
[x] No [ ] Yes *(If yes, complete lines below)*
Name _____
Asbestos Lic. No. ___ - ____
Name _____
Asbestos Lic. No. ___ - ____

7. Party for Whom Work is Being Performed: Name: The Cooper Group, Inc.
Address: 666 Fifth Avenue, New York, NY 10103

C. PROJECT SITE INFORMATION

Provide all information requested below for the building/site at which the asbestos project will be conducted.

8. Project Location: County: New York
Name of building: _____
Room or other specific location: Entire Basement, 1st and 2nd floors, roof and facade
Street address: 23 Thames Street
City, town or village: New York, New York 10006

9. Building Information
Current use: Commercial
Building age: _____
Prior Use: Commercial
Building size: _____ sq. ft.

10. Building Representative/Site Contact: Name: Chanan Rozenbaum Phone No.: (212 208-4614

SH-483 (10-03)

NYC-WTC_000134205

NYC 9/11 Public Portal Document

D. PROJECT DETAILS

Provide all information requested below relating to specifics of asbestos removal.

11. Project Dates: Starting date _____ Completion date _____

If amended: Starting date _____ Completion date _____

Is this a phased project: ☑ No ☐ Yes *(If yes, list scope, location, and starting and completion dates for each phase in Section F, Remarks)*

12. Do You Anticipate Doing: ☐ Night work ☐ Weekend work ☑ Shift work
(Provide details in Section F.)

13. Dollar Amount of Contract Between Parties Named in Item 3 and Item 7 $ _____

14. If work is being conducted under a variance, check appropriate box and supply variance number.

☐ Applicable Variance No. _____ ☐ Individual Variance Petition No. _____

15. Asbestos Dissemination Prevention Methods *(use Section F, Remarks, and attach additional sheets if necessary)*

a) Type of equipment & ventilation systems used

Equipment:	Manufacturer:	Model Number:	Quantities:
HEPA Vacuums	N/A	N/A	2
Portable Decon Unit	N/A	N/A	1
Respirators	Various	N/A	8
Negative Air Unit	Various	N/A	1

b) Name of air monitoring firm Airtek Environmental Corp. Asbestos Lic. No. 99 – 0589

c) Laboratory performing the analysis

Name Airtek / ATC Associates ELAP Registration No. 11040 / 10879

16. Type of Asbestos Work *(check all that apply)*

☑ Pipe related ☑ Roofing/flashing ☐ Caulking/mastic ☐ Clean-up
☐ Vessel covering ☐ Siding ☐ VAT ☐ Sprayed-on insulation
☐ Demolition - if site survey was previously submitted, provide Reference No. _____
☑ Other *(specify)* WTC Dust, window caulking and coping stone caulking

17. Type and Amount of Asbestos-Containing Material Involved

Friable linear feet		57	Friable square feet		17,651
Non-friable linear feet	+		Non-friable square feet	+	671
Total linear feet	=		**Total square feet**	=	18,322

NYC-WTC_000134206

NYC 9/11 Public Portal Document

E. FEE SCHEDULE

Refer to item 17 to calculate your required fees. This fee is non-refundable. Check one box for linear feet and one box for square feet.

18. Fee Schedule:

a) Linear feet		b) Square feet	
☑ 0 - 259	($0)	☐ 0 - 159	($0)
☐ 260 - 429	($100)	☐ 160 - 259	($100)
☐ 430 - 824	($200)	☐ 260 - 499	($200)
☐ 825 - 1649	($500)	☐ 500 - 999	($500)
☐ 1650 or more	($1000)	☑ 1000 or more	($1000)

19. Total Fee Due for Project $ 1000.00 *(add 18a and 18b)*

F. REMARKS

Use this area to provide additional information.

Asbestos Abatement shall be performed utilizing NYC DEP Sub-Chapter G Regulations and site specific variance.

All waste shall be double bagged for disposal purposes.

Waste Disposal Site: Meadowfill Landfill, Route 2, Box 68, Bridgeport, WV.
BFI Imperial Landfill- PO Box 47, Route 980 & Boggs Rd., Imperial PA
Cumberland County Landfill - 620 Newville Rd, Newburgh, PA 17242

Waste Hauler/Transporter: DJM, Inc. 109-113 Jacobus Ave., Kearny, NJ 07032

G. SIGNATURE

I certify that the information specified on this notification is true and accurate and that the project will be conducted in compliance with the requirements of Code Rule 56.

June 9th, 2005
Date

Signature of the Contractor or Duly Authorized Representative

Print Name of the Contractor or Duly Authorized Representative

See next page for submission instructions and notification information.

NYC-WTC_000134207

NOTIFICATION OF DEMOLITION AND RENOVATION			
Operator Project #	Postmark	Date Received	Notification

I. TYPE OF NOTIFICATION (O = Original/ R = Revised) : **O**

II. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)

OWNER	**Greenwich Street Project, LLC.**			
Address:	**666 Fifth Ave.**			
City:	**New York**	State:	**NY**	ZIP: **10103**
Contact:	**Chanan Rozenbaum**			Tel: **(347) 643-9960**
REMOVAL CONTRACTOR:				
Owner:	**Hazardous Elimination Corp.**			
Address:	**195 H Central Ave.**			
City:	**Farmingdale**	State:	**NY**	ZIP: **11735**
Contact:	**Donald Gold**			Tel: **631-752-2898**
OTHER OPERATOR:				
Address:				
City:		State:		ZIP:
Contact:				

III.TYPE OF OPERATION (D = Demolition/R = Renovation):

IV. IS ASBESTOS PRESENT? (YES/NO) **Yes**

V. FACILITY DESCRIPTION (Include building name, number, and floor or room number):

Building name:					
Address:	**23 Thames St.**				
Address:					
City:	**New York**	State:	**NY**		County: **Manhattan**
Site Location:	**Entire**				
Building Size:	Sq.meter:	SqFt:		# of Floors	Age in Yrs.
Present Use:	**Commercial**			Prior Use: **Same**	

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL:

Bulk Sampling to analyze PLM.

VII. APPROXIMATE OF RACM TO BE REMOVED AND NON-FRIABLE ASBESTOS MATERIAL THAT WILL BE REMOVED. SPECIFY THE AMOUNT OF ASBESTOS BELOW:

	RACM to be Removed	non-friable Asbestos Material to be removed: Category I	Category II
Linear feet Cable wrap insulation, cable insulation	**57**		
window caulking/glazing. Transite conduit.			
Surface Area- Square Feet WTC Dust	**9,064**		
Roof flashing/tar, window/coping stone caulk		**682**	
Surface Area- Square Feet Façade WTC Dust	**8,576**		
Volume RACM off Facility Component-Cubic Feet			

VIII. SCHEDULE DATES OF ASBESTOS REMOVAL (MM/DD/YY)	Start:	Completion:
IX. SCHEDULED DATES OF DEMOLITION/RENOVATION: (MM/DD/YY)	Start:	Completion:

NOTIFICATION OF DEMOLITION AND RENOVATION (continued)

X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:

All work to be done in accordance with the applicable New York State Industrial Code Rule 56, NYC-DEP Sub-Chapter G utilizing a site specific variance.

XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:

A HEPA Vacuum shall be kept on site at all times.

WASTE TRANSPORTER #1	**DJM**				
Address:	**109-113 Jacobus Avenue**				
City:	**Kearny**	State:	**NJ**		ZIP: **07032**
Contact:	**Vito Pesce**			Telephone	**201-997-8870**
XII. WASTE DISPOSAL SITE	**Meadowfill Landfill Corp.**				
Address:	**Rt. 2 Box 68 Dawson Drive**				
City:	**Bridgeport**	State:	**WVA**		ZIP: **26330**
Contact:	**John McGarvey**			Telephone:	**304-842-2784**
XIII. WASTE DISPOSAL SITE	**Cumberland County Landfill**				
Address:	**620 Newville Road**				
City:	**Newburgh**	**State:**	**PA**		**ZIP: 17242**
Contact:				**Telephone:**	
XIII. WASTE DISPOSAL SITE					
Address:					
City:		**State:**			
Contact:				**Telephone:**	

XIV. IF DEMOLITION IS ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW

Name:	Title:
Authority:	
Date if Order (MM/DD/YY):	Date Ordered to Begin (MM/DD/YY)

XV. FOR EMERGENCY RENOVATIONS

Date and Hour of Emergency (MM/DD/YY):

Description of the Sudden , Unexpected Event:

Explanation of How the Event caused Unsafe Conditions or Serious Disruption of Industrial Operation:

XVI. DESCRIPTION OF PROCEDURE TO FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NON-FRIABLE ASBESTOS BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER:

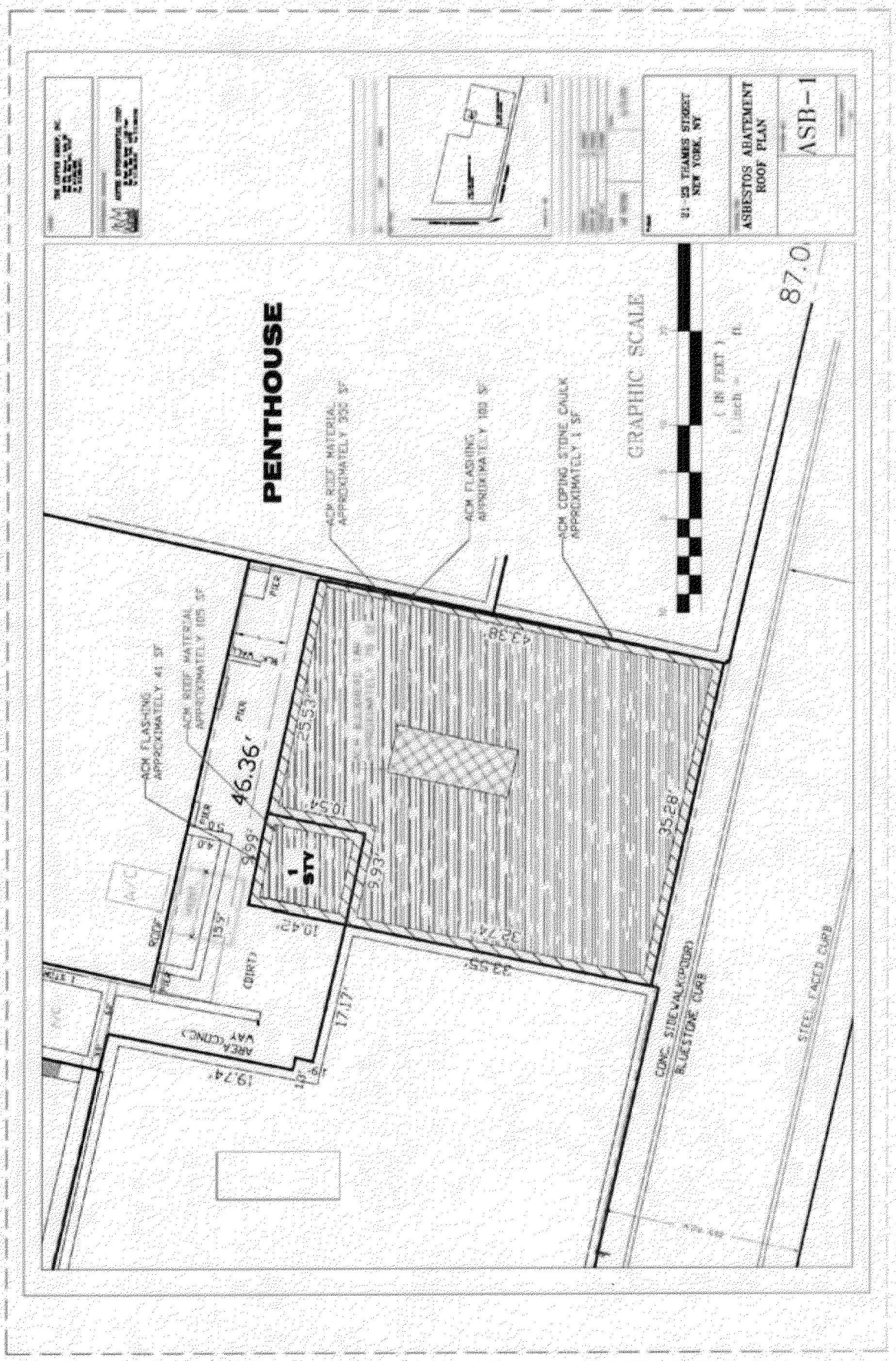
WORK WILL BE STOPPED IMMEDIATELY, NEW ENGINEERING CONTROL AND CLEAN-UP AS PER ICR-56 WILL BE IMPLEMENTED IMMEDIATELY, NEW ABATEMENT METHOD WILL BE EVALUATED TO ADDRESS NEW SITUATION PROPERLY.

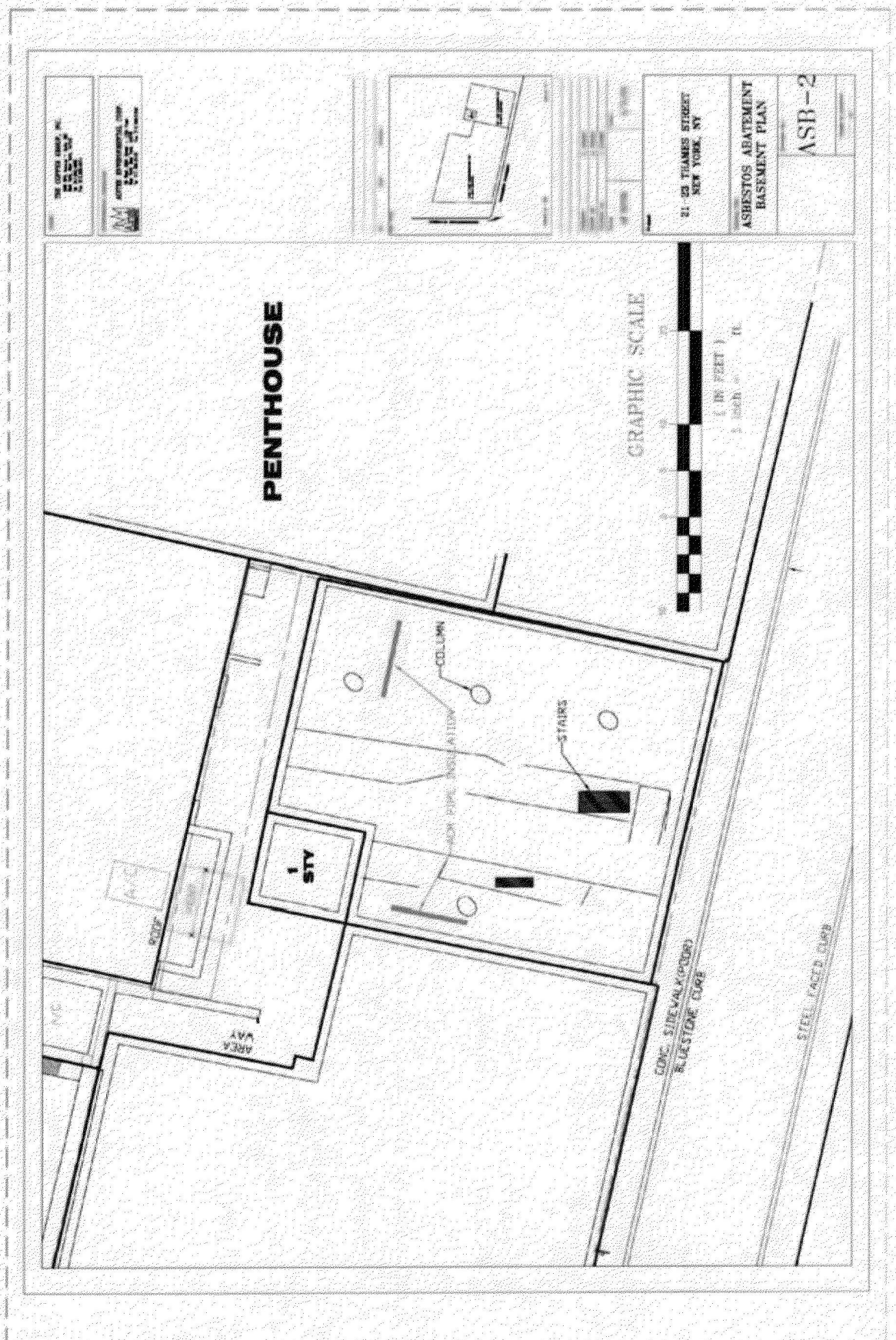
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE REGULATION (40CR PART 61 SUBPART M) WILL BE ON-SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required 1 year after promulgation).

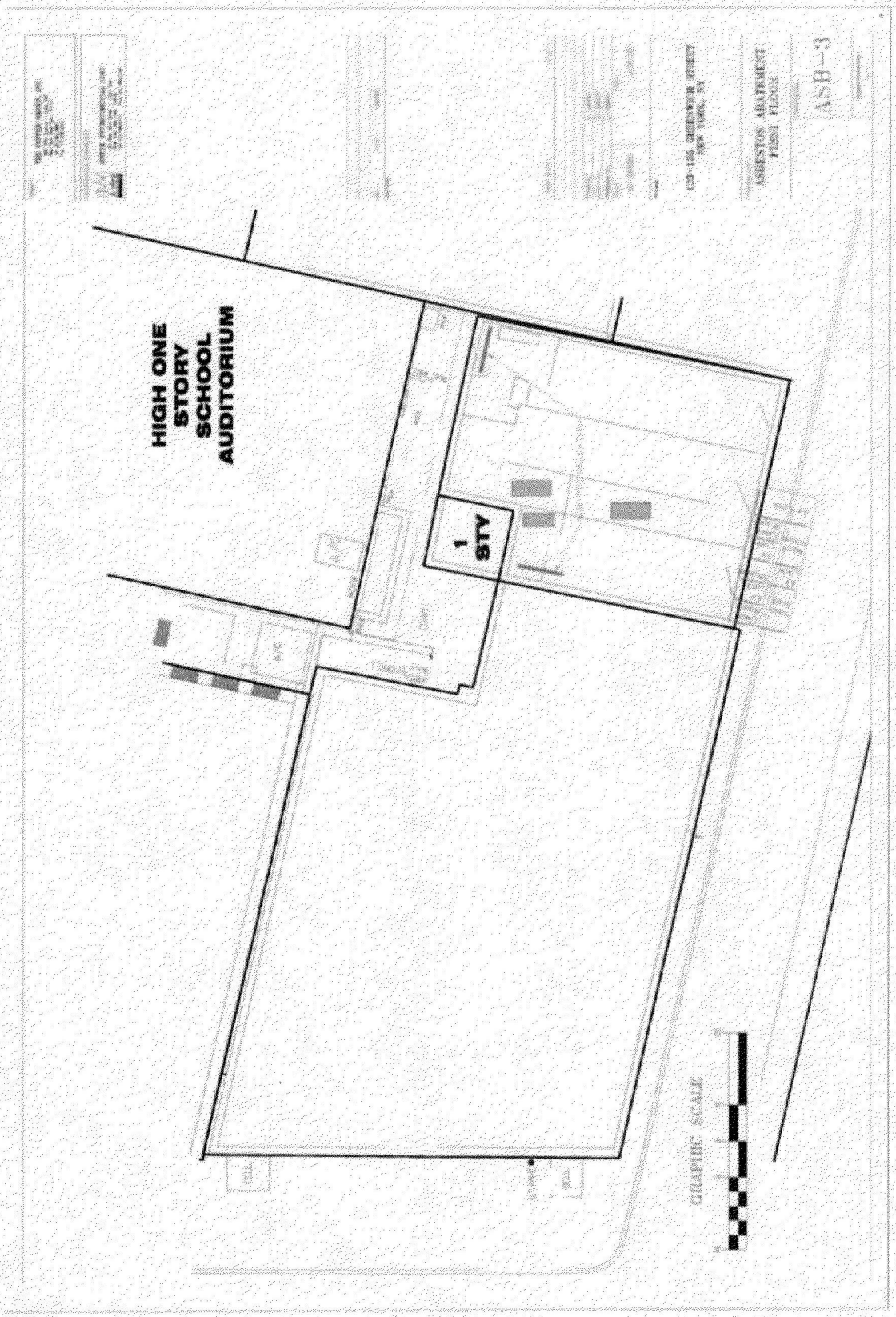
Signature of Owner /Operator **Date**

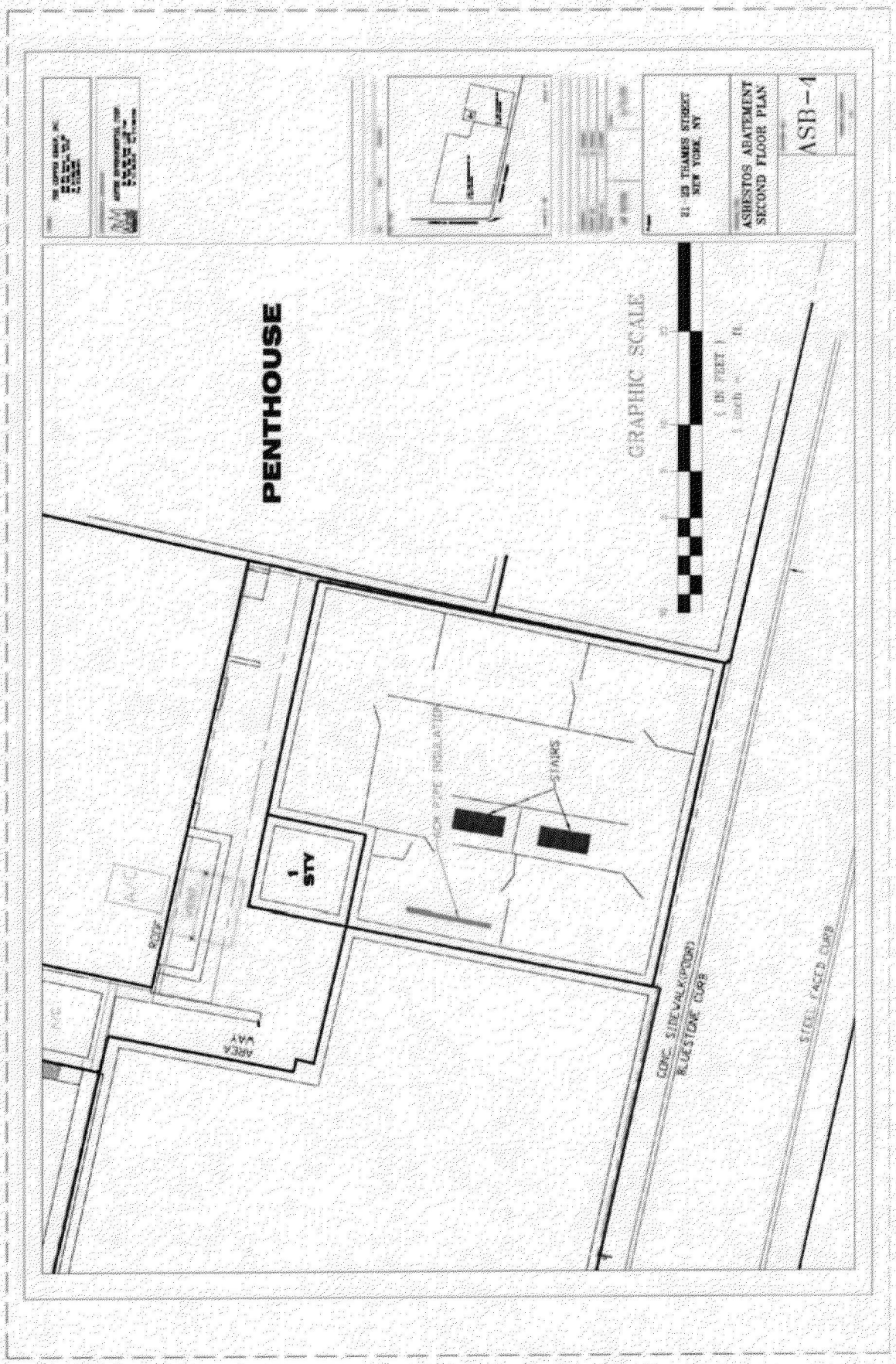
XVIII. I CERTIFY THAT THE ABOVE MENTIONED INFORMATION IS CORRECT.

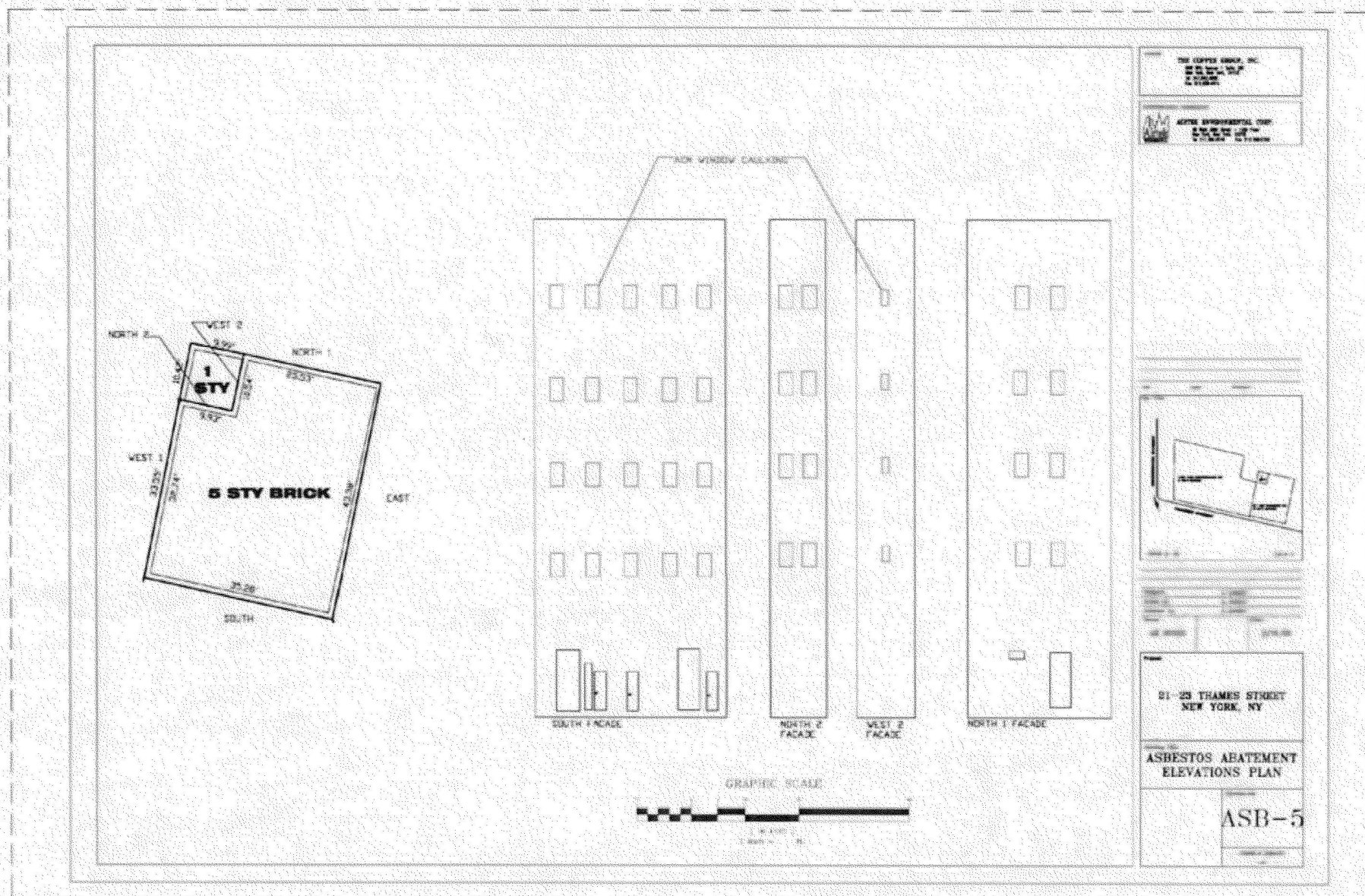
Signature of Owner /Operator **Date**


PENTHOUSE
ACM ROOF MATERIAL APPROXIMATELY 350 SF
ACM FLASHING APPROXIMATELY 100 SF
ACM COPING STONE CAULK APPROXIMATELY 1 SF
GRAPHIC SCALE
(IN FEET)
1 inch = ft.
ACM FLASHING APPROXIMATELY 41 SF
ACM ROOF MATERIAL APPROXIMATELY 105 SF
46.36'
1 STY
43.38'
25.53'
10.54'
9.99'
9.93'
35.28'
32.74'
33.55'
10.42'
17.17'
19.74'
(DIRT)
AREA (CONC.) WAY
CONC. SIDEWALK (POOR)
BLUESTONE CURB
STEEL FACED CURB
87.0
21-23 THAMES STREET
NEW YORK, NY
ASBESTOS ABATEMENT
ROOF PLAN
ASB-1


ASB-2
ASBESTOS ABATEMENT
BASEMENT PLAN
21 - 23 THAMES STREET
NEW YORK, NY
PENTHOUSE
GRAPHIC SCALE
COLUMN
STAIRS
1 STY
AREA WAY
CONC. SIDEWALK (POOR)
BLUESTONE CURB
STEEL FACED CURB


HIGH ONE STORY SCHOOL AUDITORIUM
1 STY
ASB-3
GRAPHIC SCALE


PENTHOUSE
GRAPHIC SCALE
1 STY
STAIRS
AREA WAY
CONC. SIDEWALK(POOR)
BLUESTONE CURB
STEEL FACED CURB
21-23 THAMES STREET
NEW YORK, NY
ASBESTOS ABATEMENT
SECOND FLOOR PLAN
ASB-4


NORTH 2
WEST 2
NORTH 1
1 STY
WEST 1
5 STY BRICK
EAST
SOUTH
SOUTH FACADE
NORTH 2 FACADE
WEST 2 FACADE
NORTH 1 FACADE
GRAPHIC SCALE
21-23 THAMES STREET
NEW YORK, NY
ASBESTOS ABATEMENT
ELEVATIONS PLAN
ASB-5

NYC 9/11 Public Portal Document

Attachment II

NYC 9/11 Public Portal Document

August 3, 2005

Mr. Chris D'Alimonte
New York City Department of Education
Division of School Facilities
44-36 Vernon Boulevard, 5th Floor
Long Island City, NY 11101

Re: 90 & 100 Trinity Place (HS of Economics & Finance)
133-135 Greenwich Street & 21-23 Thames Street

Dear Mr. D'Alimonte:

Enclosed is a set of documents outlining a scope of work that calls for temporarily altering existing duct work and fresh air intakes at 90 & 100 Trinity. This plan was deemed acceptable by the Board of Education at an August 3rd meeting with the BOE, Copper Group and Airtek Environmental. The Copper Group has agreed to incur the cost of making these necessary alterations. Please review the scope outlined by Aitrek and the drawing prepared by Eastern Air; should you have any questions please feel free to contact me at 347-643-9960.
Sincerely,

Chanan Rozenbaum
Project Developer

NYC-WTC_000134216

NYC 9/11 Public Portal Document

August 3, 2005

Mr. Rick Landman
New York University
70 Washington Square South, Room 1204
NY, NY 10012

Re: 90 & 100 Trinity Place (HS of Economics & Finance)
133-135 Greenwich Street & 21-23 Thames Street

Dear Mr. Landman:

Enclosed is a set of documents outlining a scope of work that calls for temporarily altering existing duct work and fresh air intakes at 90 & 100 Trinity. This plan was deemed acceptable by the Board of Education at an August 3rd meeting with the BOE, Copper Group and Airtek Environmental. The Copper Group has agreed to incur the cost of making these necessary alterations. Please review the scope outlined by Aitrek and the drawing prepared by Eastern Air; should you have any questions please feel free to contact me at 347-643-9960Sincerely,

Chanan Rozenbaum
Project Developer

NYC 9/11 Public Portal Document

AIRTEK ENVIRONMENTAL CORP.

39 WEST 38TH STREET, 12TH FLOOR, NEW YORK, NY 10018
PHONE (212) 768-0516 FAX (212) 768-0759
WWW.AIRTEKENV.COM

August 3, 2005

Mr. Chris D'Alimonte
New York City Department of Education
Division of School Facilities
44-36 Vernon Boulevard
Long Island City, NY 11101

Re: 90 & 100 Trinity Place (HS of Economics & Finance)
Possible Air Infiltration from the Decontamination & Destruction of
133-135 Greenwich Street and 21-23 Thames Street

Dear Mr. D'Alimonte:

A thorough inspection of the subject structures and the adjacent structures has been conducted on July 6, 2005. Communicating openings, air intakes, and other potential pathways of contamination have been identified for inclusion in the decontamination design. Facility managers for the adjacent structures have been contacted so that engineering controls may be implemented to protect occupants. Of particular concern are air intakes of the school building directly to the east of the project site. These concerns have been addressed cooperatively with the Department of Education.

The Copper Group's Asbestos Contractor will apply a hard barrier (plywood) over the existing 7th floor fresh air intake louver on the West side of 100 Trinity, anchor it to the masonry, and then apply two layers of 6-mil polyethylene sheeting over the hard barrier. Since the fresh air intake louver will be covered, three (3) windows, in areas not occupied by students, on the 8th floor (i.e. kitchen), will be opened to allow fresh air to penetrate the 8th floor. The air from the opened windows on the 8th floor will go thru a dropped ceiling which is the return air plenum for the 7th floor MER with ducts that lead directly to the two (2) units. This will supply adequate make-up fresh air to the two units.

The Copper Group's Mechanical Contractor will blank off the two fresh air intake ducts attached to the fresh air intake louver (approximately 12" x 6" each) on the 6th floor (Exterior Fresh Air Louver on Thames Street is inaccessible) of 90 Trinity. It is the understanding that the HVAC unit in question is not in operation (has not been in operation for at least three years), and will not be put back into operation. Therefore, no make air is required. The Copper Group's Mechanical Contractor will also provide a temporary extension to the fresh air intake duct (100 Trinity) and extend it towards Cedar Street over the Auditorium Roof.

If you have any questions or require further clarification, please do not hesitate to contact me.

Sincerely,
Airtek Environmental Corp.

Michael Porter

Michael Porter,
Senior Project Manager

Cc: Chanan Rozenbaum, The Copper Group
05-0701

NYC-WTC_000134218

NYC 9/11 Public Portal Document

EASTERN AIR INC.
260 JOHNSON AVENUE, BROOKLYN, NEW YORK 11206 • TEL: (718) 821-3636 • FAX: (718) 821-9104

August 3, 2005

Copper Construction
Jim Pershin
752 Pacific Street
Brooklyn, N.Y. 11238

Re: Roof Duct Work at Greenwich & Thames

Dear Jim,

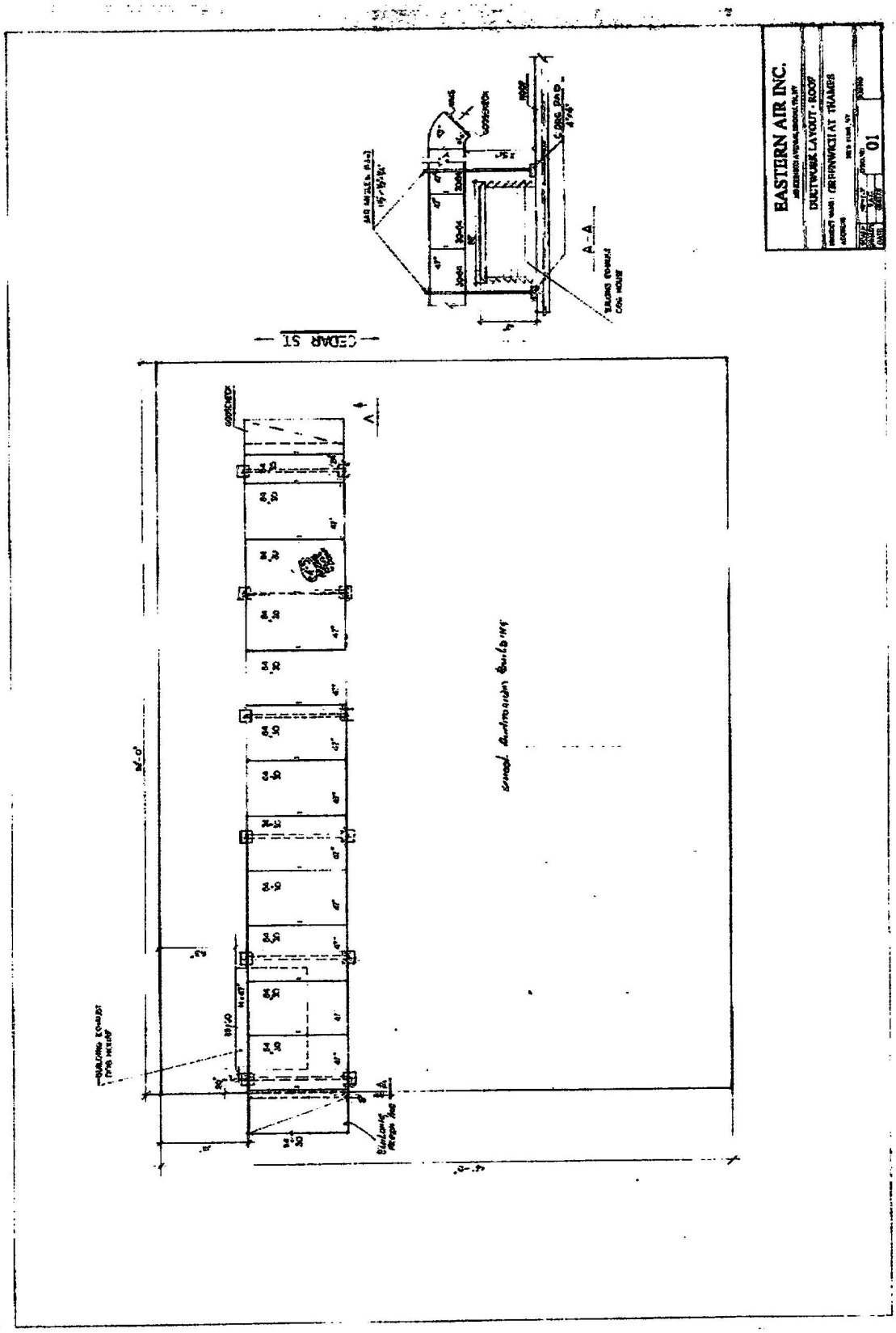
Please find the following drawing for proposed fresh air duct alterations. Also note above mentioned alterations are temporary. The existing duct will be re-installed back to present configuration.

Please see additional specifications attached.

Sincerely,

Ilya Meshchaninov
Easteren Air Inc.

NYC-WTC_000134219


EASTERN AIR INC.
DUCTWORK LAYOUT - ROOF
GREENWICH AT THAMES
01
CEDAR ST
A-A

NYC 9/11 Public Portal Document

Exterior:

We are requesting a variance from the following subsections to facilitate the decontamination of the facade:

Section 1-81(j)	No pre-cleaning of the work area(s)
Section 1-81(m)	Partial plasticization of the work area(s)
Section 1-82(a) & 1-83(a)	Remote decontamination facilities
Section 1-91	No negative air
Section 1-112(d) & 1-112(e)	No 1st & 2nd settling period and no 2nd & 3rd cleaning

typo

The exterior of the building was decontaminated as a part of the NYC DEP Building Exterior Cleaning Program following 9/11/01. Airtek's visual inspection of the façade indicates that it is advisable to conduct low-pressure power washing prior to initialing demolition activities. The exterior of the building will be cleaned in accordance with the NYC DEP WTC Dust/Residue Roof & Façade Cleaning Procedures.

Interior:

Phase 1 –Soft Strip:

We are requesting a variance from the following subsections:

DW?

Section 1-125(i) Isolation Barriers

We request relief from 1-125(i): Isolation Barriers. It is the intent of the project to seal all windows and communicating openings to the outside of the building from the outside with two layers of 6-mil poly and plywood barriers. The intent of this action is to create a sealed structure that will allow decontamination activities within the building while reducing the possibility of migration of dust to the outside of the structure.

All interior materials, including moveable objects, will be subject to decontamination and removal or, if porous, will be bagged and disposed of as ACM waste. All ceiling systems (plaster, tiles, sheetrock, etc.), wall systems (plaster, wall board, etc.), and floor systems, (tiles, carpet, etc.) will be removed and bagged for disposal as ACM waste. Remaining structural members, pipes, boiler and freezer boxes will be wet-wiped, HEPA vacuumed, and encapsulated with a penetrating encapsulant. All accessible interstitial spaces will be wet-wiped, HEPA-vacuumed, and encapsulated. Operable windows will be articulated, wet wiped, HEPA-vacuumed, and encapsulated. Full worker and waste decontamination facilities will be attached to the entrance on Thames Street. The decontamination facilities will comply with NYC DEP Title 15 §1-82 & §1-83. Ref #4 - Attachment DW to be used during the initial lobby cleaning phase. Needs to be in the application.

Phase II – In Place Interior Friable ACM:

Upon completion of the soft strip phase, interior friable ACM will be abated.

1. Pipe Insulation – 50 lf

glovebag Method? not checked.

Following 2nd and 3rd cleanings and the settling periods, final air testing will be conducted by TEM. Upon successful clearance air testing, the building will be turned over to the demolition contractor for conventional demolition.

Phase III - In Place Exterior ACM:

We are requesting a variance from the following subsections for the roofing materials:

Section 1-41(c)	During abatement air sampling inside the work area to be performed instead of outside.
Section 1-41(d)	No post abatement clearance air monitoring
Section 1-81(j)	No pre-cleaning of the work area(s)
Section 1-81(m)	Partial plasticization of the work area(s)
Section 1-82(a) & 1-83(a)	Remote decontamination facilities
Section 1-91	No negative air
Section 1-102(b)	Not to fully saturate ACRM with amended water Use of foam
Section 1-112(d) & 1-112(e)	No 1st & 2nd settling period and no 2nd & 3rd cleaning

We proposed to use Attachment FR - Procedures for use of Foam or Similar Viscous Liquid in Removal of Asbestos Containing Roofing (ACRM) in New York City

In-place ACM has been identified as follows:

1. Roof Membrane – 350 sf
2. Roof Flashing – 100 sf
3. Bulkhead Tar – 20 sf

In addition to the requirements set forth in FR 6, arrangements have been made to ~~seal~~ relocate and/or seal vents at the H.S. of Economics & Finance at the start of this project.

We are requesting a variance from the following subsections for the coping stone caulk:

Section 1-41(c)	During abatement air sampling inside the work area
Section 1-41(d)	No post abatement clearance air monitoring
Section 1-106(b)	To use partial tents

1. Coping Stone Caulk – 1 sf

We proposed to use Attachment IC – ACM caulking material from the top of the parapet wall(s) on the roof.

We are requesting a variance from the following subsections for the exterior window caulk:

Section 1-41(c)	During abatement air sampling inside the work area
Section 1-41(d)	No post abatement clearance air monitoring
Section 1-106(b)	To use partial tents

1. Window Caulk – 9 sf (210 lf)

We proposed to use Attachment EC – ACM caulking materials from building facades.

These materials will be abated last in the decontamination sequence. For detailed information on the asbestos survey conducted, please refer to the Airtek Asbestos Survey Report dated May 31, 2005 (Attached).

Utilities - General:

Utility service is currently cut off to the building. All electricity and water required for the work will be drawn from sources outside the building.

Project Monitoring:

Project Monitoring: Throughout the decontamination activities, project air monitoring will be conducted in addition to the Perimeter Monitoring described above. Project Monitoring will be conducted in strict accordance with RCNY Title 15 Chapter 1, Section 1-41 to 1-45, ~~with the exception that~~ all sample analyses will be by TEM. and approved variance application

Clearance Testing: Aggressive area clearance testing for asbestos will be conducted for all work areas by TEM. Aggressive clearance testing for metals will be conducted by NIOSH 7300.

Clearance Criteria:

Clearance testing for asbestos will be acceptable when all samples for a given work area meet the 70 structures per square millimeter TEM standard. ~~Clearance testing for metals will~~ be ~~acceptable when all samples meet the following criteria~~:

Antimony	250 ug/m3
Barium	250 ug/m3
Beryllium	1.0 ug/m3
Cadmium	5.0 ug/m3
Chromium (III)	250 ug/m3
Copper	500 ug/m3
Lead	25 ug/m3
Manganese	100 ug/m3
Mercury	12.5 ug/m3
Nickel	50 ug/m3
Zinc	1,000 ug/m3

Additional clearance sampling shall be performed as specified in the workplan.

~~Structural Framing:~~

Due to the impossibility of removing structural framing without the risk of building collapse, all structural framing will be wet-wiped, HEPA vacuumed, and encapsulated with penetrating encapsulant. As a part of the conventional demolition that will follow the decontamination, these materials will be characterized for asbestos content and RCRA characteristics, and will be disposed of as appropriate based on the test results.

Thank you for your time and consideration,

Sincerely,

Michael Porter

Michael Porter
Senior Project Manager

MP:mtf

NYC 9/11 Public Portal Document

7624206030

NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
Asbestos Control Program
59-17 Junction Boulevard, 8th Floor, Flushing, NY 11373-5108

Building Dept. or TRC No
For OFFICIAL USE ONLY

ONLY TYPEWRITTEN FORMS WILL BE ACCEPTED

ASBESTOS PROJECT NOTIFICATION
(ASBESTOS INSPECTION REPORT)

When submitting this form at the NYC Department of Buildings, the original form and three (3) copies with original signatures are required. Submittal at the NYCDEP requires one copy of the form with original signatures. This form must be submitted to the NYC DEP not less than one week in advance of the start of abatement activities.

1. $1200 (See fee schedule)

I. FACILITY

2. Address: 23 (Premise #) Thames Street (Prefix / Street Name) Borough: Manhattan Zip: 10006

AKA: 21 Thames Street 3. Block: 52 4. Lot: 8

5. Type of Facility: Commercial 6. Name of Building:

II. BUILDING OWNER

7. Name: Greenwich Street Project, LLC. 8. Contact Person: Chanan Rozenbaum

9. Tel. #: (347) 643-9960 Fax #: (212) 208-4614

10. Address: 666 Fifth Avenue City: New York State: NY Zip: 10103

III. GENERAL CONTRACTOR

11. Name: Tel. #:

IV. ASBESTOS ABATEMENT CONTRACTOR

12. Name: Hazardous Elimination Corp. 13. Contact Person: Ernie Carranza

14. Federal Employer ID. #: PII 15. Tel. #: (631) 752-2898 Fax #: (631) 752-2910

16. Address: 195 H Central Avenue City: Farmingdale State: NY Zip: 11735

V. THIRD PARTY AIR MONITOR

17. Name: Airtek Environmental Corp. 18. Contact Person: Benn Lewis

19. Federal Employer ID. #: PII 20. Tel. #: (212) 768-0516 Fax #: (212) 768-0759

21. Address: 39 West 38th Street City: New York State: NY Zip: 10018

22. Sample Analysis Laboratory: Airtek / ATC Associates 23. NYS DOH ELAP #: 11040/10879

VI. PROJECT INFORMATION

24. Starting date for this portion of work: Projected completion date:

Asbestos work schedule: ☑ Monday ☑ Tuesday ☑ Wednesday ☑ Thursday ☑ Friday ☑ Saturday ☑ Sunday

Shift From: ☐ am ☐ pm to ☐ am ☐ pm

If other, specify:

Access to inspect the premises must be provided during the work schedule indicated in this item.

25. Total amount of asbestos-containing material to be abated during this work

18,322 Square Feet, and/or 57 Linear Feet

ACP7
12/20/02

NYC-WTC_000134224

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6426206039 **ASBESTOS INSPECTION REPORT (continued)**

26. Asbestos Hauler DJM Co. Inc. NYS DEC Permit # NJ-344 Tel.# (973) 491-0006

Disposal Site(s) Meadowfill Landfill, Bridgeport WV & Cumberland Landfill Shippberg, PA

27. This asbestos abatement is part of a (Item a through e requires filing of this form with the NYC Department of Buildings)

a) ☑ Demolition b) ☐ Boiler Replacement c) ☐ Sprinkler Replacement d) ☐ Renovation/Alteration

e) ☐ Fireproofing Replacement f) ☑ Other (Describe) Asbestos Abatement/WTC Dust Remediation

28. TYPE OF ABATEMENT (Check all appropriate boxes)

☑ Removal ☐ Enclosure ☐ Encapsulation ☐ Repair ☐ Clean up

29. ABATEMENT PROCEDURE (Check all appropriate boxes)

☑ Full Containment ☐ Glovebag ☐ Tent ☑ DEP Variance Application

30.LOCATIONS OF ABATEMENT

Floor(s)	SECTION OF FLOOR (e.g. entire, east wing, room # basement, lobby, etc.)	AFFECTED SURFACES CONTAINING ACM (e.g. Pipe lagging, ceiling, plenum ducts, storage tanks, decking, etc.)	AMOUNT OF ACM SQUARE FEET	AMOUNT OF ACM LINEAR FEET	DESCRIPTION OF WORK BEING PERFORMED (e.g. running cable, removing fire sprinkler, removing and replacing boilers, etc.)
Bsmt-5	Entire	WTC Dust	9,064		Sub-Chapter G
Bsmt	Entire	Pipe Insulation		32	Asbestos Abatement
1	Entire	Pipe Insulation		15	Asbestos Abatement
2	Entire	Pipe Insulation		10	Asbestos Abatement
Roof	1st Floor Roof	Roof & Flashing	146		Asbestos Abatement
Roof	5th Floor Roof	Roof, Flashing & Tar	525		Asbestos Abatement
1-5	Facade	Window Caulk ✓	10		Asbestos Abatement
1-5	Facade	WTC Dust	8,576		WTC "Bldg Ext. Cleanup"
Roof	5th Floor Roof	Coping Stone Caulk ✓	1		Asbestos Abatement

Additional pages attached ☐

31. I hereby declare that the information provided herein is true and complete to the best of my knowledge. I am familiar with Federal, State and NYC laws and regulations applicable to asbestos related work

Airtek Environmental	Hazardous Elimination	Airtek Environmental
Print Name of Air Monitor	Print Name of Asbestos Contractor	Print Name of Applicant
Signature	Signature	Signature
Date	Date	Date

32. I understand that as the owner of a building where asbestos abatement activity occurs, I am responsible for the performance of the asbestos abatement activities in accordance with the Asbestos Control Program Rules. I have contracted the third party air monitor who is completely independent of all parties involved in the asbestos project. I hereby declare that I have authorized the filing of this notification for the work specified herein

Greenwich Street Project, LLC. _____ _____

Print Name of Owner Signature Date

A STAMPED COPY OF THIS FORM INCLUDING AMENDMENTS MUST BE AVAILABLE AT THE WORK SITE.

Any modification of information provided on this form must be reported immediately in writing directly to the NYC DEP ACP

The requirements of the Asbestos Control Program Rules may not be lawfully avoided or lessened through the performance of work in incremental or piecemeal fashion.

NYC-WTC_000134225

NYC 9/11 Public Portal Document

NYC DEP ASBESTOS CONTROL PROGRAM VAR # _____

ATTACHMENT DW

REQUIREMENTS FOR THE USE OF THE SHOWER ROOM OF THE WORKER DECONTAMINATION UNIT TO DECONTAMINATE ASBESTOS WASTE

(REFERS TO ASBESTOS PROJECTS OF 1,000 OR MORE LINEAR FEET OR SQUARE FEET).

APPLIES TO VARIANCE FROM TITLE 15, CHAPTER 1, RULES OF THE CITY OF NEW YORK SECTION 1-83(b)2; {15 RCNY § 1-83(b)2}.

1. The worker decontamination unit shall be fully framed and plywood sheathed and constructed in compliance with 15 RCNY § 1-82.

2. The shower room shall be equipped with at least a 6 feet flexible hose for waste decontamination.

3. A remote holding area as per 15 RCNY § 1-83(a)2 (with a lockable door) for the asbestos waste shall be located at the worksite and shall comply with all applicable Department of Sanitation Regulations (16 RCNY 8 et. seq.).

4. Any roll-on/roll-off container/trailer used for a remote holding area shall be fully plasticized on all interior surfaces and shall have a lockable door and shall be labeled as per OSHA Regulation 29 CFR 1926.58K(2)(ii) and shall comply with 16 RCNY 8 et. seq.

5. Waste removal shall not occur during worker shift changes or when workers are showering or changing.

6. All other applicable sub-sections of 15 RCNY § 1-118 shall be complied with.

NOTE: This attachment may be revised in the future.

TRU/JM 6/98

NYC-WTC_000134226

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NYC DEP ASBESTOS CONTROL PROGRAM **VAR #**_____

ATTACHMENT FR

PROCEDURES FOR USE OF FOAM OR SIMILAR VISCOUS LIQUID IN REMOVAL OF ASBESTOS CONTAINING ROOFING MATERIAL (ACRM) IN NEW YORK CITY

A) VARIANCE APPLICATION

Applicant shall apply to NYC DEP for a variance from Title 15, Chapter 1, Rules of the City of New York sections: 1-81(j), 1-81(m); 1-91; 1-102(b); 1-41(c), 1-41(d); 1-112(d) and 1-112(e). {Also see Item E.4 below re 1-82(a) and 1-83(a)}.
NOTE: The applicant shall comply with all applicable sections of Title 15, Chapter 1, Rules of the City of New York.

B) ACCEPTABLE FOAM OR VISCOUS LIQUID

1. Shall be non-toxic, and not require special respiratory protection for handling.
2. Shall coat and maintained a stable blanket (minimum 1" thickness) for the duration of the removal process.
3. Shall wet the ACRM and remain wet through the bagging process.
4. Shall leave an identifiable colored residue when it dissipates.
5. Shall not require special disposal.

C) PERSONAL PROTECTION

1. Appropriate personal protective equipment shall be worn.
2. Persons entering the work area shall be provided with well-tractioned and correctly-fitting rubber boots.

D) BACKGROUND CONDITIONS

1. Preliminary examination shall be conducted and precautions shall be taken to prevent damage to the interior of the building and to ensure no adverse effect on the structural stability of the roof due to the abatement activity.
2. Abatement shall not be carried out during adverse weather conditions (e.g. precipitation, heavy winds, etc).
3. The work area on the roof shall be cordoned off, and only authorized persons shall have access to the "designated" work area.

E) MINIMUM REMOVAL PROCEDURES

1. Electric power in the work area shall be shut down and isolated.

2. Movable objects shall be removed from the work area, or kept in place and wrapped in one sheet of 6-mil plastic sheeting. Fixed objects including perimeter walls, bulkheads, cooling towers, ducts and other rooftop appurtenances shall be covered in one sheet of plastic (minimum height= 6 ft.)

3. The worker decontamination unit shall be constructed at an entry/exit from each work area in accordance with 15 RCNY § 1-82, with at least a shower room and a clean room. In addition to the shower head(s), the shower room shall be equipped with a flexible hose for waste decontamination (for removal of less than 1,000 square feet). FOR MORE than 1,000 square feet of removal, a separate waste decontamination facility as per 15 RCNY § 1-83 shall be located at an entry/exit from each work area.

4. Remote decontamination facilities will be considered; however, a variance must be requested from 15 RCNY § 1-82(a) and, also, from 15 RCNY § 1-83(a) (if more than 1,000 square feet will be removed).

5. The remote holding area for the asbestos containing waste shall comply with Title 16, Chapter 8, Rules of the City of New York. (16 RCNY 8 et seq.)

continued p.2.

NYC-WTC_000134227

NYC 9/11 Public Portal Document

6. Provisions shall be made to ensure a safe and adequate air supply to affected building(s). All vents, skylights, air intakes, windows and doors opening onto the roof, and all other openings are to be sealed with 2 layers of 6-mil plastic or fitted with HEPA-filters where appropriate.
NOTE: In lieu of sealing vents, air intakes, etc., with 2 layers of plastic or HEPA-filters, temporary extensions may be installed to a height of 10 feet to ensure adequate air exchange. Drains may be equipped with 5 micron filtering systems in lieu of being sealed.

FOAM PROCEDURES FOR ACRM REMOVAL

7. Prior to actual removal the built-up roofing shall be blanketed and wetted with a minimum 1" coating of the acceptable foam or viscous liquid which shall be maintained for the duration of the removal until the material is bagged. The foam or viscous liquid shall be confined to the work area.

8. Manual methods of removal are recommended; however, if hand-held power tools are used to drill, cut into, or otherwise disturb the asbestos-containing roofing material, the power tools shall be equipped with HEPA-filtered local exhaust ventilation and operated to prevent potential fiber release.

9. Portable HEPA-vacuum machines shall be available during abatement.

10. Clean-up procedures shall involve removal and bagging of
a) the asbestos containing roofing material (ACRM)
b) visible accumulations of asbestos containing waste
c) all excess foam or similar viscous liquid
d) all debris, and shall be followed by a thorough wet cleaning.

11. All tools shall be wet cleaned and HEPA-vacuumed, and then removed from the work area upon completion.

12. The work area shall be allowed to dry completely before the visual inspection is conducted. This inspection, to be performed by the independent third party air monitoring firm/consultant, shall confirm the absence in the work area of:
a) ACM or ACW bags or debris,
b) excess foam or other viscous liquid.

NOTE: If the work area fails visual inspection, it shall undergo another wet cleaning and/or HEPA vacuuming until it passes the visual inspection.

13. When the visual inspection is successful, all plastic may be removed.

F) AIR MONITORING

1. Daily continuous air sampling inside the work area and, also, in all spaces where egress from the work area is through the structure itself, shall be conducted in accordance with sections 1-41(a), 1-41(b) and 1-42 of Title 15, Chapter 1, Rules of the City of New York.
2. If any air sample(s) within the work area exceed 0.01 f/cc or the background level, whichever is greater, then work shall stop and methods shall be altered to reduce airborne fiber concentrations to the aforementioned level.
3. Clearance air monitoring is not required.
4. Personal air monitoring data shall be submitted to the Department within one week after the completion of the project, if requested.

G) GENERAL PROVISIONS

A copy of the approval, the corresponding notification, and this procedure shall be posted conspicuously at the entrance to the work area.

NOTE: A conservative approach has been used in the design of this protocol to provide as much relief as possible while maintaining adequate measures to safeguard health and safety.

The Department of Environmental Protection will consider additional variances in conjunction with this application.

TRU/JM 6/98

NYC-WTC_000134228

NYC 9/11 Public Portal Document

Table of Contents

1.0	**General**	**3**
2.0	**Related Submittals**	**3**
2.1	**Environmental Community Air Monitoring Plan**	
2.2	**Health & Safety Plan**	
2.3	**Waste Management Plan**	
3.0	**Regulatory Submittals**	4 5
3.1	**Asbestos Survey**	
3.2	**Site Survey**	
3.3	**NYC DEP Variance Application**	
3.4	**NYSDOL Notification**	
3.5	**USEPA Notification**	
4.0	**Utilities – General**	4 5
5.0	**Monitoring**	**5**
6.0	**Clearance Criteria**	6 5
7.0	**Abatement Phase**	7 6
7.1	**Part I: Exterior Cleaning**	
7.2	**Part II: Soft Strip**	
7.3	**Part III: In-Place ACM**	
7.4	**Structural Framing/Masonry Façade**	
8.0	**Conventional Building Demolition**	**8**
8.1	**Permits**	
8.2	**Dust Suppression**	
8.3	**Site Protection**	
8.4	**Waste Management – Conventional Demolition**	
8.5	**Site Work**	
Attachment I:	**Variance Application**	
Attachment II:	**Mechanical Controls**	

NYC-WTC_000134229

NYC 9/11 Public Portal Document

Part II

Environmental Community Air Monitoring Plan During the Abatement and Demolition of 133-135 Greenwich Street and 21-23 Thames Street

Prepared for:

The Greenwich Street Project, LLC
666 Fifth Avenue
New York, New York

Prepared by:

Airtek Environmental Corp.
39 West 38th Street
New York, NY 10018

212-768-0516

Date: June 27, 2005
Comments August 4, 2005
Re-submittal August 11, 2005
Additional Comments September 13, 2005
Re-submittal September 16, 2005

NYC 9/11 Public Portal Document

Table of Contents

1.0 General

1.1 Operations to be Monitored
1.2 Project Monitoring
1.3 Neighboring Properties
1.4 Environmental Sampling and Analytical Methodologies

2.0 Visible Emissions

2.1 Abatement Phase
2.2 Demolition Phase
2.3 Notification

3.0 Abatement Phase Air Monitoring

3.1 Visible Emissions
3.2 Community Air Monitoring
3.3 Abatement Work Area Monitoring

4.0 Demolition Phase Air Monitoring

4.1 Visible Emissions
4.2 Community Air Monitoring

5.0 Interpretation of Sample Data

5.1 Target Air Quality Levels
5.2 EPA Site-Specific Trigger Levels
5.3 Notification
5.4 Monitoring Data

Attachment A: Table I – Community Monitoring
Table II – Data Reference Levels

Attachment B: Table III – Abatement Phase Work Area Monitoring

Attachment C: Community Monitoring Locations

Attachment D: Quality Assurance Project Plan

NYC-WTC_000134231

NYC 9/11 Public Portal Document

Environmental Community Air Monitoring

1.0 General:

Environmental air monitoring and visual observation will be conducted during the abatement and demolition of the buildings located at the 133-135 Greenwich Street/21-23 Thames Street site (The Site). The proposed program consists of two primary forms of environmental monitoring: Work Area Monitoring required by law for environmental remediation projects and intended to monitor the efficacy of project engineering controls; and voluntary Community Monitoring intended to gauge and document the impact (or lack thereof) of the project to the surrounding area.

1.1 Operations to be Monitored

The project schedule for The Site includes four weeks of soft-strip contaminants of potential concern (COPCs) abatement and removal, asbestos abatement and removal ~~under a variance~~ from the NYCDEP, and four weeks of conventional demolition. All work will be monitored for visible emissions by the Environmental Consultant's Site Hygienist. The Abatement Phase regulated under NYC DEP will be monitored under both a Community Air Monitoring Program, and a Work Area Monitoring Program. The Demolition phase of the project will be monitored under the Community Air Monitoring Program. All air monitoring conducted under this plan will be conducted by the Environmental Consultant's New York State DOL certified air sample technicians under the supervision of the Environmental Consultant's Certified Industrial Hygienist (CIH).

in accordance with the Asbestos Rules and a variance request approval

1.2 Project Monitoring

Monitoring of this project will include all standard monitoring functions for environmental remediation projects including observations for visible emissions, air sampling and analyses, inspection and monitoring of the contractor's work practices, and reporting to the Owner and the Regulators. These general monitoring functions will be applied to both the Abatement Phase and Demolition Phase of this project.

1.3 Neighboring Properties

The Environmental Community Monitoring Plan described in this document is intended to address the impact of the project to the surrounding area. In addition to that effort, properties directly adjacent to the project site have been given particular attention by this plan.

1.3.1 Trinity Place Schools

NYC-WTC_000134232

NYC 9/11 Public Portal Document

Extensive effort and cost has been invested in working with the NYC Department of Education to provide engineering controls and testing support to protect the educational facilities at 100 and 90 Trinity Place. Detailed information on these efforts is included in Attachment II to Part I of this submittal – "Work Plan."

Did not receive resubmittal of Part I

1.3.2 125 Greenwich Street

Specific measures are planned to monitor the impact of the project on the 125 Greenwich Street building. One of the Environmental Community Air Monitoring stations specified in this document (school auditorium roof station) is directly adjacent to this building (within 20'). In addition, the Environmental Consultant will conduct Abatement Phase work area monitoring continuously during abatement phase work shifts between the project site and the 125 Greenwich Street building.

Address?

1.3.3 Bldg. South of Thames Street

This building, across Thames Street from the Project Site, will be separated from the project site by two Environmental Community Air Monitoring stations. In addition, during the Abatement Phase, extensive work area monitoring will be conducted on Thames Street.

1.4 Environmental Sampling and Analytical Methodologies

Sampling and analytical methodologies utilized for this Project, will comply with published protocols from EPA and/or National Institute of Occupational Safety and Health ("NIOSH"). Where appropriate other published standards may be substituted and project-specific adjustments to protocols may be made. Generally, sampling will be conducted once every 24-hour work period, except for asbestos (TEM samples), which will be taken for the duration of every work shift and once a day during non-work days during the abatement phase. Real-time particulate monitoring will be on a continuous basis. Instantaneous mercury readings will be obtained to evaluate the air quality around the work site at multiple locations each work day.

2.0 Visible emissions

2.1 Abatement Phase

During

~~At the commencement of~~ each work shift, the Environmental Site Hygienist will conduct a thorough inspection of all engineering control systems including containment barriers, and negative air control systems, and exterior. If any visible emission is noted on the exterior of the work area, all work will be stopped and not restarted until an evaluation of engineering controls has identified and corrected the cause of the emission. The evaluation may include, but is not limited

NYC-WTC_000134233

NYC 9/11 Public Portal Document

to, work activities and smoke testing of the isolation barriers. Any damaged or malfunctioning engineering control will be repaired immediately. The work will not be restarted until engineering controls are repaired or determined to be functioning properly.

2.2 Demolition Phase

During each work shift, the Environmental Consultant will observe demolition operations to monitor visible dust in the air and suppression measures being applied by the demolition contractor. The Environmental Consultant may, depending on the severity and duration of dust condition, order a stoppage of the work or require modified work practices to reduce visible dust.

2.3 Notification

The EPA Region 2 office and NYCDEP will be notified ~~as~~ promptly ~~as reasonably possible~~ of any visible emission observed by the Environmental Consultant to cross the property line of the Buildings. The Environmental Consultant will promptly advise the EPA Region 2 office and the NYCDEP of the corrective actions taken. A report of inspection results and corrective actions taken will be provided to the EPA Region 2 office and NYCDEP within 2 business days of any incident showing ~~any~~ visible emissions.

3.0 Abatement Phase Air Monitoring

3.1 Visible Emissions

Monitoring for visible emissions will be conducted as described above in Section 2.0 of this specification.

3.2 Community Air Monitoring

Prior to the commencement of any site work, one week of background community air monitoring will be conducted as detailed in *Table 1 – Community Air Monitoring* in Attachment A (Community Monitoring) to this specification. Community Air Monitoring as detailed in Table 1 will continue through the Abatement Phase and until completion of the Demolition Phase.

Community Monitoring locations are identified on the drawing included in Attachment C (Community Monitoring Locations) to this specification. The locations include the roof of the school auditorium on Cedar Street, the sidewalk bridge on Thames Street, and at ground level at the intersection of Thames and Greenwich Streets.

If the environmental air monitoring locations need to be changed during the abatement phase due to site conditions, NYC DEP and USEPA Region 2 office

NYC-WTC_000134234

NYC 9/11 Public Portal Document

NYC DEP not notified w/ community monitoring

will be notified promptly. The community air monitoring locations will not be moved until NYCDEP and the USEPA Region 2 office accept the change.

3.3 Abatement Phase Work Area Monitoring

availability of posting of air monitoring data

Asbestos Rules allow for TEM ∆ language

Air monitoring per the requirements of NYC DEP Title 15 will be conducted with the exception that Transmission Electron Microscopy (TEM) will be utilized as the analytical method for asbestos. Sample locations will be selected by the Site Hygienist in accordance with Title 15 and based on the configuration of the abatement containment areas. Containment area monitoring of additional Contaminants of Potential Concern (COPCs) that are not regulated under Title 15 will be conducted voluntarily by the Owner. The COPCs to be monitored are: ~~Asbestos (TEM)~~, Metals (ICP-AES) and crystalline silica (XRD).

Asbestos covered by Asbestos Rules

This monitoring is detailed in *Table 3 - Abatement Phase Work Area Monitoring* in Attachment B (Work Area Monitoring) to this specification.

4.0 Demolition Phase Air Monitoring

4.1 Visible Emissions

Monitoring for visible emissions will be conducted as described above in Section 2.0 of this specification.

4.2 Community Air Monitoring

Community Air Monitoring will be conducted as detailed in *Table 1 – Community Air Monitoring* in Attachment A (Community Monitoring) to this specification. Community Air Monitoring will continue through the completion of the Demolition Phase.

Initial Community Air Monitoring locations are identified on the drawing included in Attachment A (Community Monitoring) to this specification. If the environmental air monitoring locations need to be changed during the demolition phase due to site conditions, ~~NYC DEP and~~ USEPA Region 2 office will be ~~notified promptly~~. The community air monitoring locations will not be moved until NYCDEP and the USEPA Region 2 office accept the change.

5.0 Interpretation of Sample Data

The Target Air Quality Levels and EPA Site Specific Trigger Levels for the Site are set forth in Attachment A, Table 2.

The following actions will be taken if there is an exceedance of Target Air Quality Level. If there is an exceedance of either the Target Air Quality Level or the EPA Site Specific

NYC-WTC_000134235

NYC 9/11 Public Portal Document

Trigger Level, actions under the EPA Site Specific Trigger Level heading below will govern.

5.1 Target Air Quality Levels

Any 24-hour $PM_{2.5}$ and PM_{10} value in excess of the Target Air Quality Level will be considered an "exceedance" and the actions described below will be taken.

During the first week of sampling any sample of an analyte other than $PM_{2.5}$ and PM_{10} in excess of 3 times the Target Air Quality Level for that analyte, unless superceded by an EPA Site-Specific Trigger Level, will be considered an exceedance and the actions described below will be taken.

Following the first week of sampling, a "rolling average" will be established based initially on the first week's results, to which will be added daily values as results are received from the laboratory. A rolling average value for any analyte, other than $PM_{2.5}$ and PM_{10}, in excess of the relevant Target Air Quality Level will be considered an exceedance of Target Air Quality Level and the actions described below will be taken.

Exceedance of an established Target Air Quality Level for any analyte calculated as provided above will result in an evaluation of engineering controls and work techniques in the source area. This evaluation shall include but not be limited to the evaluation of work activities that may be causing the exceedance, smoke testing of the isolation barriers in question, and inspection and corrective action.

5.2 EPA Site Specific Trigger Levels

Any 24-hour value (work shift value on work days or four hour value on non-work days in the case of asbestos) in excess of the EPA Site Specific Trigger Level will be considered an "exceedance." Exceedances of EPA Site Specific Trigger Levels will result in a stoppage of work associated with the exceedance until an evaluation of emission controls is performed and corrective action is in place. The EPA Site Specific Trigger Levels are applicable to individual sample result. If any of the individual sample results exceed an EPA Site Specific Trigger Level, then notification must be made to the USEPA Region 2 office and the NYCDEP. Work will be reinitiated once the USEPA Region 2 office has agreed (and NYC DEP during the Abatement Phase in the case of asbestos exceedances) to the corrective action(s) proposed to prevent the potential for exceedances in future work and such corrective actions have been implemented.

5.3 Notification

The US EPA Region 2 office and the NYCDEP will be notified promptly of any exceedance of either a Target Air Quality Level or an EPA Site Specific Trigger Level and will be notified promptly of any corrective actions taken in connection

NYC-WTC_000134236

NYC 9/11 Public Portal Document

with a Target Air Quality Level exceedance and the implementation of corrective actions in connection with an EPA Site Specific Trigger Level exceedance.

5.4 Monitoring Data

All sampling results collected pursuant to this specification, in suitable electronic form, will be promptly provided to the USEPA Region 2 office weekly and exceedances will be reported as provided above. The Environmental Consultant will provide 24 hour averages and graphical data for all continuous sampling data collected.

Work area monitoring data generated during the abatement phase will be provided promptly in electronic format to NYC DEP.

NYC-WTC_000134237

NYC 9/11 Public Portal Document

Attachment A

Table 1 – Community Air Monitoring

Location	Parameter(s)	Sample Frequency	Analysis Method	Comment
Site Area	Mercury	Each work day	Lumex, portable mercury analyzer	Lumex results are real-time data logged
Site Area	Particulate (Visible dust emissions)	Continuous during working shifts	Visual Observation	Visual Notations on site log
Site Perimeter-three fixed locations listed below	Particulate PM-2.5, PM-10	Daily	Laser dispersion Real time analysis, E-BAM	The Met One E-BAM (with a heated inlet to address condensible emissions)will be utilized for continuous PM10 and $PM_{2.5}$ monitoring
Site perimeter-one of the fixed locations below.	Particulate PM-2.5, PM-10	Each work day	Met One BAM 1020	Comparison data for E-BAMs.
1. Waste load-out area on the Southwest corner of the Buildings 2. Roof of HS Auditorium 3. East end of Thames Sidewalk Bridge	1. Asbestos 2. Silica 3. Metals 4. Total Dust 5. Organics	ACM each work shift, and each off-day. Daily Daily Daily Organics – See footnote 2 below	1. TEM 2. XRD 3. ICP/MS 4. Microbalance 5. PCB (EPA TO-7A) Dioxin (EPA T0-9A (mod)) and PAH (EPA TO-13A)	Sampling durations may be modified based on Site Conditions. See footnote 1 below
Field Blanks	All Analytes			In accordance with QAPP and Published Methodology

NYC-WTC_000134238

NYC 9/11 Public Portal Document

Footnote 1: Sampling duration and/or flow rates may be modified to provide optimum analyte loading for analysis based on results of ongoing analyses. Initial Sampling flow rates should be in accordance with rates prescribed in the sampling method.

Footnote 2: Organics will be sampled as provided below under "Notes on the Community Air Monitoring Table."

Notes on Community Air Monitoring Table:

General: Blanks will be processed in accordance with the analytical methodologies and standard industry practice.

Asbestos:

Asbestos sample collection will be performed in accordance with NIOSH 7402, "Asbestos by TEM". Asbestos analysis will be performed utilizing Transmission Electron Microscopy ("TEM") analysis specified in 40 CFR Part 763, Asbestos Hazard Emergency Response Act, ("AHERA"), with the following modifications:

1. The sensitivity on TEM air samples will be less than 0.002 s/cc.
2. Both the length and width of all asbestos fibers will be recorded.
3. Confirmation by EDS and/or SAED will be performed for each fiber analyzed.
4. The mineralogy of the fibers will be noted and recorded.

Dust:

Airborne dust and particles at the Site will be monitored using real-time air monitoring instrumentation. Real-time air monitoring for PM-2.5 and PM-10 will be accomplished with direct reading particulate in air monitors. Data from Met One E-BAM Particle Counters are to be data logged. At one location the Met One E-BAM Particle Counter data will be compared against PM-2.5 results from PM-2.5 direct read results obtained using a Met One BAM 1020 monitor. At another location, the Met One E-BAM Particle Counter data will be compared against PM-10 results from PM-10 direct read results obtained using a Met One BAM 1020 monitor. This equipment will be operated for at least one week before the Abatement Phase begins. Prior to the commencement of the Abatement Phase, the EPA Region 2 office will be provided with the results comparing the data from the Met One E-BAM with the alternative instrument and the proposal of a correction factor, if needed.

Respirable Dust/Crystalline Silica – Metals – Total Dust:

Respirable dust and crystalline silica sampling will be performed according to NIOSH Method 0600 protocol with analysis following NIOSH Method 7500 (XRD).

NYC-WTC_000134239

NYC 9/11 Public Portal Document

Metals sampling and analysis will be performed following NIOSH 7300 "Elements by ICP," except that ICP-MS will be utilized. A hot block/acid digestion will be utilized. Metals to be analyzed by ICP-MS and reported are: Antimony, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Manganese, Mercury (particulate), Nickel and Zinc.

Total Dust sampling and analyses will be conducted by NIOSH 0500.

Mercury:

In addition to metals monitoring for mercury particulate using air filters, real-time monitoring will be performed. The readings will be entered into the PDA program for inclusion with the daily download of sample collection data.

Real-time monitoring will be performed daily throughout the project. Mercury monitoring will be performed utilizing a Lumex RA 915+ direct read instrument.

The Lumex RA915+ will be utilized to obtain detection levels below established Site air contaminant criteria. At a minimum, mercury readings will be taken twice a shift at the fixed air monitoring locations. At the discretion of the Environmental Consultant and as daily Site conditions may dictate, additional mercury readings may be taken.

Organic Compounds (Dioxin/PCBs/PAHs):

Organic compounds samples will be collected at specified points along the project schedule as follows:

1. On the first day of the Background Phase, one sample of each organic compound at each community monitoring location will be collected (three total samples per location). The samples from the location with the highest particulate readings will be analyzed.
2. Organic samples will be collected at each community monitoring location once a week on a different day of the work week during the Abatement Phase and Demolition Phase, until all days of the work week are used and then the same schedule will be repeated until project completion. Samples from the location with the highest particulate readings for that day will be submitted for analysis. This will result in the processing of the samples that have the best likelihood of representing the "worst case." A total of three samples per week, one Dioxin, one PCB, one PAH will be analyzed.
3. Samples for organic compound analyses will be analyzed within fourteen days under normal laboratory analysis turn-around time

NYC-WTC_000134240

NYC 9/11 Public Portal Document

Attachment A

Table 2- Data Reference Levels for Community Monitoring

Analyte	Target Air Quality Levels See Note 1	EPA Site Specific Trigger Levels – See Note 2
Metals		
Antimony	5 ug/m3	14 ug/m3
Barium	5 ug/m3	5 ug/m3
Beryllium	0.02ug/m3	0.2ug/m3
Cadmium	0.04 ug/m3	2 ug/m3
Chromium – See Note 3	0.6 ug/m3	60 ug/m3
Chromium VI		0.6 ug/m3
Copper	10 ug/m3	100 ug/m3
Lead	1.5 ug/m3	5 ug/m3
Manganese	0.5 ug/m3	0.5 ug/m3
Mercury	0.3 ug/m3	3 ug/m3
Nickel	0.2ug/m3	28 ug/m3
Zinc	16 ug/m3	160 ug/m3
Particles and Dusts		
Asbestos	0.00028 f/cc (SEM PCMe fibers)	70 S/mm2 (TEM AHERA structures)
Particulate PM-10 (24 hour average)	150 ug/m3	150 ug/m3
Particulate PM-2.5 (24 hour average)	40 ug/m3	65 ug/m3
Respirable Silica (crystalline)	10 ug/m3	10 ug/m3
Organics (semi-volatiles)		
Dioxins/Furans (2,3,7,8 – TCDD equiv.)	0.00025 ng/m3	0.025 ng/m3
PCB (total Aroclors)	0.12 ug/m3	12 ug/m3
PAH (benzo-a-pyrene equivalent)	0.034 ug/m3	3.4 ug/m3

Note 1: A rolling average after the first week of sampling, except for PM-10 and PM-2.5.
Note 2: A 24-hour value.
Note 3: If a chromium value is in excess of the Target Air Quality Level (0.6 ug/m3), this will result in a stoppage of work; and, that sample will be speciated for chromium VI to determine that its concentration does not exceed the USEPA Site Specific Trigger Level for chromium VI (0.6 ug/m^3), and the appropriate actions pertaining to an exceedance of the USEPA Site Specific Trigger Level *for chromium IV* will continue to be conducted.

NYC-WTC_000134241

NYC 9/11 Public Portal Document

Attachment B

Table – 3: Abatement Phase Work Area Monitoring

Location	Parameter(s)	Sample Frequency	Analysis Method	Comment
Site Area	Visible Dust emissions	Each Work Day	Visual Observation	
All sample points required by NYC DEP Regulations for ACM as determined by Site Hygienist	Asbestos	Work shifts and once a day on non-work days	1. TEM	
Waste Decon Clean-room at Greenwich Street	1. Asbestos 2. Silica 3. Metals	ACM each work day. Alternate Silica & Metals	1. TEM 2. XRD 3. ICP/AES	
Personnel Decon Clean Room at Greenwich Street	1. Asbestos 2. Silica 3. Metals	ACM each work day. Alternate Silica & Metals	1. TEM 2. XRD 3. ICP/AES	
Rotating Basis at Negative Air Exhaust nearest interior abatement	1. Asbestos 2. Silica 3. Metals	ACM each work day. Alternate Silica & Metals	1. TEM 2. XRD 3. ICP/AES	
Blanks	1. Asbestos 2. Silica 3. Metals	2 blanks per day 1 blank per week 1 blank per week	1. TEM 2. XRD 3. ICP/AES	

Notes to Table 3:

Work Area Monitoring for Asbestos will be conducted under AHERA Rules and referenced to the 70 s/cc EPA Site Specific Trigger Level.

Work Area Monitoring for all COPCs will be referenced to the applicable OSHA Standard and the EPA Site-Specific Trigger Levels (Table 2).

NYC-WTC_000134242

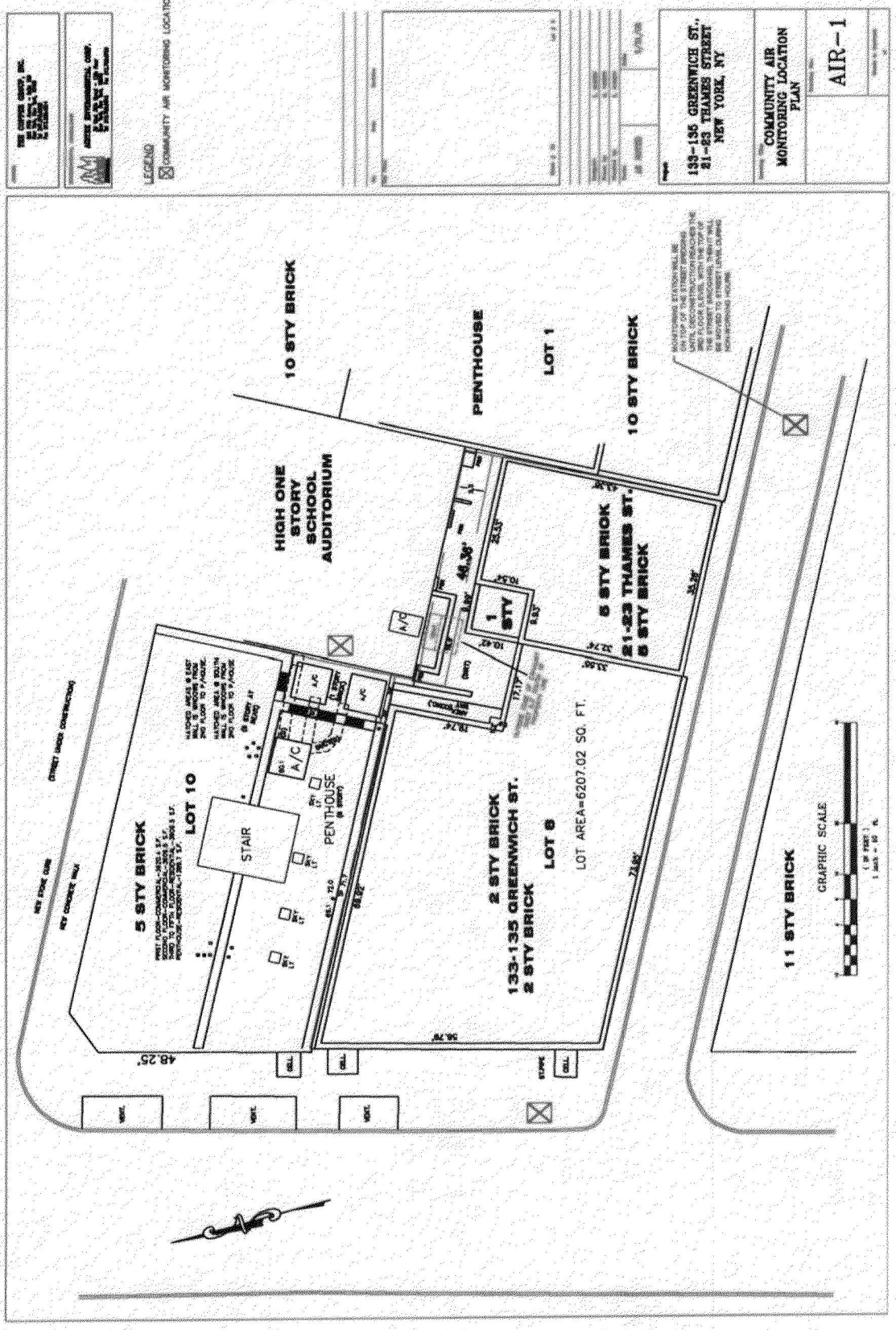
NYC 9/11 Public Portal Document

Attachment C

Community Monitoring Locations

NYC-WTC_000134243

NYC 9/11 Public Portal Document



NYC-WTC_000134244

NYC 9/11 Public Portal Document

Attachment C

Quality Assurance Program Plan
133-135 Greenwich Street/21-23 Thames Street Deconstruction
Environmental Monitoring Program

Revision 1
Effective Date: August 11, 2005

Prepared By: _____ Date: _____

Clifford A. Cooper, CIH - Quality Coordinator

Reviewed By: _____ Date: _____

Michael Porter, Senior Project Manager

Approved By: _____ Date: _____

Benn Lewis, Vice President

NYC-WTC_000134245

NYC 9/11 Public Portal Document

This QAPP has been distributed to the individuals listed below. Airtek IH Coorinator will be responsible for distributing the QAPP to each Airtek Field team member and contractors participating in the environmental data operations.

Distribution List

Name	Address	Phone Number	Electronic Mail

NYC-WTC_000134246

NYC 9/11 Public Portal Document

Table of Contents

INCL. PAGE NUMBERS

1. **OVERVIEW**

2. **SAMPLE TRACKING DATA MANAGEMENT**

2.1 Definitions

2.2 Responsibilities

2.2.1 Project Manager
2.2.2 *Sample Collection Staff*
2.2.3 *IH Quality Coordinator / QA Officer*
2.2.4 Data Manager

2.3 Policy

2.3.1 Basic Health and Safety Policy:

2.3.2 Training Requirements and Documentation:

2.3.3 Analysis Requirements:

2.34 Equipment Maintenance and Inspection:

2.4 Procedure

2.4.1 Sample Collection and Data Entry

2.4.2 Sending Samples to Analytical Laboratories

2.4.3 Receipt of analytical results

2.5 Quality Control

2.5.1 AIRTEK Data Manager

2.5.2 AIRTEK Quality Coordinator/QA Manager

2.6 Records

2.6.1 Records Created

2.6.2 Records Retention

2.6.3 Records Care and Maintenance

2.6.4 When Records Transferred to Archives for Storage

3.0 QUALITY ASSURANCE PROCEDURES

3.1 Chain of Custody

NYC-WTC_000134247

NYC 9/11 Public Portal Document

3.2 Sample Shipment

3.3 Quality Assurance Manual Methods for PM_{10}

3.4 Quality Assurance for $PM_{2.5}$

3.5 Quality Assurance for Gaseous Pollutants

4.0 DATA REPORTS

4.1 Laboratory Reports and Chain of Custody Forms

5.0 DATA VALIDATION AND QUALITY ASSURANCE AUDIT

5.1 Data Validation

5.2 Laboratory Audits

5.3 Field Audits

6.0 CORRECTIVE ACTION

7.0 ASSESSMENT AND OVERSIGHT

7.1 Assessments and Response Actions

7.2 Reports to Management

8.0 DATA VALIDATION AND USABILITY

9.0 EXCEEDANCE NOTIFICATION

9.1 Notification

9.2 Monitoring Data

NYC-WTC_000134248

NYC 9/11 Public Portal Document

1.0 OVERVIEW

The Quality Assurance Project Plan (QAPP) documents the methods and procedures for the Environmental Air Monitoring and waste characterization operations during the deconstruction and demolition activities at 133-135 Greenwich Street & 21-23 Thames Street (the Site) are implemented and assessed with respect to quality.

The Environmental Community Air Monitoring Plan (ECAMP), Health and Safety Plan (HASP), and Waste Management Plan which are used in conjunction with this QAPP, contain specifics about the numbers and types of samples to be collected, decontamination procedures, sampling procedures, and all field activities to be performed during this program.

The Airtek Industrial Hygiene Staff are assigned the responsibility of taking many environmental samples in support of our clients.

In order to use data gathered during sampling and analysis information about the samples must be tracked methodically. Sample tracking systems integrate all data and records that relate to one sample, from the field logs to the final analytical laboratory reports. Sample tracking provides a mechanism for Airtek personnel to determine the ongoing status of a given sample.

2.0 SAMPLE TRACKING DATA MANAGEMENT

Information gathering and tracking begins before the sample is taken and is completed when the final laboratory analysis results are accepted by Airtek. When information concerning a sample is obtained, it is entered into an electronic database. This information is available for review, generation of reports, or trend analysis. This procedure addresses the following activities and applies to all environmental samples collected as part of Airtek sampling programs:

- Sample initiation
- Chain of custody
- Sample tracking
- Collection input
- Lab analysis/data input
- Data review
- Record keeping

2.1. Definitions

Chain-of- Custody Form (COC): A document that follows the sample from the point of assembly through sample shipment to final disposition. Custody of the sample is indicated on the document by signature and dates of possession.

Composite Collection Form: The document used by the Sample Collection staff to record field notes regarding composites. This form contains information about the composite which may not be given to the analytical laboratories such as site location, total sample

NYC-WTC_000134249

NYC 9/11 Public Portal Document

volume, and flow through the composite sampler. This form is used only when the collection contains composite samples. If the collection consists solely of grab samples all information is entered on the Sample Collection Form (see below).

Composite Sampler: A sampling apparatus which is used to collect a sample over time. Information associated with the composite sampler, for example sampling start and stop times, or total flow through the sampler, is recorded on the Composite Collection Form.

Data Manager: Individual responsible for the operation and maintenance of Airtek electronic data collection, storage, and reporting systems, including databases.

IH Quality Coordinator/QA Officer: Individual responsible for ensuring that sample shipments are complete and that all documentation is correct prior to shipment of the samples; coordinating sample shipments to and results reception from analytical laboratories; and ensuring that results reports are complete and received on time.

Sample Collection Form: The document used by the Sample Collection staff to record field notes regarding collected samples. This form contains information about the samples which may not be given to the analytical lab, such as sampling site location and sample collection notes. The Sample Collection Form is used in conjunction with the Composite Collection Form if the collection contains composited samples, or alone if the collection is composed solely of grab samples. In the former case information associated with the composite (such as flow data, total elapsed time, etc.) is recorded on the Composite Collection form, while information associated with the individual samples (such as any notes associated with the individual samples) would be recorded on the sample collection form.

Sample Collection Staff: Individual or group of individuals responsible for the collection of environmental samples.

Sample Team Lead: An individual within Airtek who is responsible for the routine sampling, analysis and reporting.

2.2 Responsibilities

2.2.1 Project Manager

- Manages the overall sample tracking and data management system.
- Assesses procedure implementation.
- Receives and checks all samples and chain-of-custody documents prior to shipment to analytical laboratories.
- Maintains hard copies of sample collection data.
- Monitors sampling activities.
- Establishes sample collection schedules and needed analyses.
- Resolves any questions regarding validity of samples.
- Coordinates sample submission to and results received from analytical laboratories
- Ensures all records identified by this procedure are retained and archived as specified in Section 7.3 of this procedure.
- Provides backup sample collection when required.

2.2.2 Sample Collection Staff

- Collects routine samples according to applicable policies and procedures (e.g., NIOSH, EPA, ASTM, OSHA)
- Collects all required quality control samples.

NYC-WTC_000134250

NYC 9/11 Public Portal Document

- Collects special investigation samples, as needed.
- Prepares chain-of-custody document.
- Enters all required sample collection information into field log and database.
- Maintains and calibrates sampling equipment.

2.2.3 IH Quality Coordinator / QA Officer

- Ensures that this procedure is kept up to date.
- Assesses procedure implementation.
- Receives and checks all samples and chain-of-custody documents prior to shipment to analytical laboratories.
- Coordinates sample submission to and results received from analytical laboratories
- Ensures all records identified by this procedure are retained and archived as specified in Section 7.3 of this procedure.
- Provides backup sample collection when required.
- Maintains hard copies of sample collection data.

2.2.4 Data Manager

- Administers the sample tracking database.
- Resolves collection data entry problems and assists the Sample Team Lead with collection creation or modifications.
- Loads electronic result files into database and checks data for correctness and completeness.
- Develops reports for review of sample tracking information.
- Maintains electronic files of all sample data.

2.3 Policy

2.3.1 Basic Health and Safety Policy:

All Airtek personnel must comply with applicable OSHA health and safety policies and other applicable federal, state, and local fire, health, safety, emergency preparedness, pollution prevention, and environmental protection regulations and policies.

2.3.2 Training Requirements and Documentation:

All sampling personnel receive job-specific training by reviewing the appropriate procedures. At a minimum, this training consists of the following elements:

- ACM/LBP Certification, as required
- Personnel safety and use of personal protective equipment
- Location of equipment and monitoring stations
- Monitoring and sampling equipment operation
- Sample handling and preparation
- In addition, commercially available generic training is taken, when needed.
- All training must be documented in the Berkeley Lab training database. All required documentation must be kept up to date.

NYC-WTC_000134251

NYC 9/11 Public Portal Document

2.3.3 Analysis Requirements:

All samples must be analyzed by an analytical laboratory that is state-certified (NYS DOH ELAP and/or NIST NVLAP) in the analytical methods appropriate for the samples being collected.

2.34 Equipment Maintenance and Inspection:

All equipment used for sampling and analysis must be routinely inspected and maintained to ensure its accuracy. Procedures for calibration and maintenance of Airtek sampling equipment can be found in manufacturers procedures. Calibration frequency is tracked in the IH Instrumentation and Calibration tracking log.

2.4 Procedure

Sample collections are documented using the Sample Collection Form and Composite Collection Form and each collection is divided into shipments, each of which has its own Chain of Custody Form. The shipments are sent to a commercial lab for analysis. Results are received via hard copy and/or electronic data deliverables, entered into the sample tracking database, and reviewed for completeness and accuracy. The following procedure describes the workflow for routine samples.

2.4.1 Sample Collection and Data Entry

Airtek Sample Team Lead

Specifies collection sites, samples, and frequency of collection.

Specifies analyses to be performed, analytical laboratories to be used, and required turnaround time for receipt of results.

Airtek Sample Collection Staff

Initiates collection in database and prints out Sample and Composite Collection Forms and sample vial labels.

Records all of the required information on the appropriate Sample and Composite Collection Forms while taking samples.

Enters data from the Sample and Composite Collection Forms into the database. Consults with the Sample Team Lead regarding questionable samples and ensures all questions regarding samples are resolved before proceeding. Generates and prints chain of custody documents.

Transfers samples and all documentation to the Airtek Quality Coordinator. Signs and records date and time on Chain-of-Custody Form under "Relinquished by."

Airtek Project Manager

Accepts samples and documentation from Sample Collection Staff. Signs and records date and time on Chain-of-Custody Form under "Accepted by."

Verifies samples collected and entries on sample collection and Chain-of Custody Forms for correctness and completeness. Resolves any problems with Sample Collection Staff, Sample Team Lead, and Data Manager as necessary.

2.4.2 Sending Samples to Analytical Laboratories

NYC-WTC_000134252

NYC 9/11 Public Portal Document

Airtek Project Manager

Generates and prints shipping documents for samples being sent to commercial analytical laboratories.

Transports samples to Contract Laboratory; arranges with offsite laboratories for courier pickup; or arranges with Airtek Clerical Personnel for offsite shipment of samples.

Signs and records date and time on Chain-of-Custody Form under "Relinquished by." Relinquishes samples and Chain-of-Custody Form to the analytical laboratory representative or Shipping Department for common carrier .

Commercial lab representative

Accepts samples and Chain-of-Custody Form; signs and records date and time on form under "Received by."

Completes analysis of samples.

Delivers sample results to Airtek Staff via electronic transfer or diskette to Data Manager and hard copy to Quality Coordinator.

2.4.3 Receipt of analytical results

Airtek Data Manager

Receives electronic data deliverables from analytical laboratories.

Loads data into database (electronically or manually).

Performs validation checks for timeliness, completeness and correctness on electronic results, after resolving or documenting all validation problems, passes electronic results to Sample Team Leads by advancing the data state to "Wait Authenticate."

Airtek Quality Coordinator

Receives hard copy results reports from analytical laboratories.

Reviews hard copy results for timeliness and completeness.

Passes results to appropriate Sample Team Leads, if requested.

2.5. Quality Control

2.5.1 Airtek Data Manager

Performs validation checks for timeliness, completeness and correctness for all electronic data.

Reviews Quality Assurance Quality Control (QA/QC) measures such as percent recoveries, duplicate analyses and laboratory blanks reported in the data entered into the database.

2.5.2 Airtek Quality Coordinator/QA Manager

NYC-WTC_000134253

NYC 9/11 Public Portal Document

Performs validation checks for timeliness, completeness and correctness for all hard copy data reports.

Reviews Quality Assurance Quality Control (QA/QC) measures such as percent recoveries, duplicate analyses and laboratory blanks reported in the hard copy data reports.

2.6 Records

2.6.1 Records Created

The following records may be created by this procedure:

- Field Activity Logs
- Sample and Composite Collection forms and/or field logs
- Chain-of-Custody Forms
- Shipping documents
- Laboratory analysis results
- Electronic files.

2.6.2 Records Retention

The Airtek Quality Coordinator retains hard copies of all the records created by this procedure.

The Data Manager maintains electronic records and ensures that periodic backups and archiving of electronic files is done.

2.6.3 Records Care and Maintenance

The Airtek Quality Coordinator is responsible for the care, maintenance, and disposition of records according to Airtek record management policies and procedures.

Records must be retained in an organized system so that the records are protected and easily accessed when needed.

2.6.4 When Records Transferred to Archives for Storage

All records created by this procedure are reviewed after three years for transfer to the Airtek Archives.

3.0 QUALITY ASSURANCE PROCEDURES

All samples will be immediately placed in storage/transport containers or housings following completion of the sampling period and prior to being recorded on chain-of-custody forms and placed in chilled coolers. Samples will be preserved according to the specific method requirements and delivered to the laboratory within 24 hours of collection.

Daily field audits will be carried out by a designated QA Coordinator to ensure compliance during the performance of the sampling procedures. QA Coordinator will note and will bring to the attention of the Field Manager and the Project Manager any deviations from the approved plans. All deviations will be recorded in the QA Coordinator's log and in the field notebook of the sampling team being audited.

NYC-WTC_000134254

NYC 9/11 Public Portal Document

Examples of non-compliance include not wearing appropriate PPE; Improper documentation; Failure to collect field blanks or duplicates; Improper sampling equipment; Unauthorized changes in sampling locations or sampling procedures; Improper field equipment decontamination; not properly calibrating equipment; and improper handling of samples or equipment.

The following QA/QC documentation must be met for all samples:

- Sample documentation (location, date and time of collection, etc.);
- Chain of Custody;
- Initial and continuing calibration;
- Sampling design approach;
- Determination and documentation of detection limits;
- Analyte(s) identification;
- Analyte(s) quantification;
- QC and Performance Evaluation samples.

3.1 Chain of Custody

All samples must be transferred without exception to the appropriate analysis station under chain of custody. Standard Chain of Custody must be used for this purpose.

3.2 Sample Shipment

Samples are to be treated in an appropriate and suitable manner for delivery to the analytical laboratory. All packaging and labels shall comply with Federal Department of Transportation regulations as provided in 49 CFR 171-178. Specific requirements for sample shipment are outlined in the QAPP.

3.3 Quality Assurance Manual Methods for PM_{10}

Measures of accuracy, precision, and additional measurement quality objectives for PM10 measurements are summarized on Table A-1. The same procedures may be used for TSP and lead samplers when monitoring for these. Because of US EPA requirements, a different set of procedures is used for $PM_{2.5}$.

A manual PM monitoring system consists of a sampling system at the site, an analysis system at a central location and a transportation system to get the sample filters from one to the other. The system components will function within the limits of the applicable performance specifications given in 40 CFR parts 50 and 53 Monitoring program procedures will also be in general accordance with the guidance and recommendations of applicable sections of the ``Quality Assurance Handbook for Air Pollution Measurement Systems, Volume I,(EPA/600/R94/038a) and ``Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, Part 1,(EPA-454/R-98-004).

The sampling system consists of a sampler (one or more at each site) and a human sample collection staff who loads new (unexposed) filters into the sampler, sets it to sample the filter for 24 hours (normally midnight to midnight) on a specified day, and retrieves the exposed filter afterward.

NYC-WTC_000134255

NYC 9/11 Public Portal Document

The gravimetric analysis system consists of a laboratory balance and a human analyst trained to operate it. The weighing should take place in controlled temperature and humidity. Before being weighed, both unexposed and exposed filters must be conditioned for at least 24 hours in this environment.

The unexposed and exposed sample filters are transported in their cartridges to reduce the chance of contamination.

- **Traceability of standards:**

  The following records of traceability, certification, etc. will be checked and maintained, along with criteria for the various calibrations, and audits:

  - flow: orifices certified against a NIST-traceable displacement meter
  - pressure drop: manometers certified NIST-traceable annually
  - masses and balances NIST-traceable
  - temperature and pressure NIST-traceable

- **Calibrations:** The sample collection staff performs a multi-point flow calibration of each particulate sampler using an orifice unit (quarterly, after maintenance or repairs and when indicated).

- **Precision checks** through collocation: A second sampler is placed the monitoring station.

- **Performance audits:**

  - Quarterly audits: An IH Quality Coordinator does a one-point flow audit quarterly on all samplers, using a different orifice unit than the one used to calibrate the sampler.

- **Data audit:** Data Manager reviews all the data for anomalies.

3.4 Quality Assurance for $PM_{2.5}$

Measures of accuracy, precision, and additional measurement quality objectives for PM2.5 measurements are summarized on Table A-2. These are measures to ensure the quality of data gathered using manual samplers of $PM_{2.5}$. A manual $PM_{2.5}$ monitoring system consists of a sampling system at the site, an analysis system at a central location and a transportation system to get the sample filters from one to the other.

The sampling system consists of a sampler (one or more at each site) with attached temperature and pressure instruments and a human operator who loads new (unexposed) filters into the sampler, programs it to sample each filter for 24 hours (normally midnight to midnight) on a specified day, and retrieves the exposed filters afterward. "Sequential" samplers may be used, capable of automatically changing filters to sample for several days in a row. Sequential samplers can run continuously, except for maintenance and QA checks.

The gravimetric analysis system consists of a microbalance in a climate-controlled weighing room and a human analyst trained to operate it. The weighing must take place within a narrow

NYC-WTC_000134256

NYC 9/11 Public Portal Document

range of temperature and humidity. Before being weighed, both unexposed and exposed filters must be conditioned for at least 24 hours in this environment.

The exposed sample filters are transported in a cooler to limit the loss of volatile material, and are then kept in a refrigerator if they are cannot be weighed within 10 days of sampling (they still must be weighed within 30 days of sampling to be valid). Unexposed filters are taken out to the site under similar controlled conditions (usually in a cooler, although this is not necessary).

- **Data requirements:**
    - Backup instruments, field staff, and supplies will be maintained throughout the monitoring duration to ensure continuous operation of monitoring stations and high data recovery.
    - Data quality objective: 10% coefficient of variation. The coefficient of variation, CV, is the standard deviation as a fraction of the mean:

      $$CV = \frac{s}{\bar{x}}.$$

- **Measures of Accuracy and Bias:**
    - Check of flow rate
    - Audit by collocation with a portable FRM sampler.
- **Measures of Precision:**
    - Check of flow rate
    - Collocation (see below).
- **Collocation:**
    - Monitors have a second monitor collocated at the same site, rotated between sites.
    - The second ("duplicate") sampler runs every 6 days.
    - Collocated particulate samplers must be less than 4 m apart but more than 1 m apart.

The $PM_{2.5}$ sampler requires enhanced quality control measures because of its unique design and operational attributes. Examples of these QC measures include:

- Filter equilibration temperature control of +/-2 °C over 24 hours
- A pre-sampling filter weighing within 30 days of sampling period
- Retrieving the filter from the sampler within 96 hours of collection
- A post-sampling filter equilibration and re-weighing within 240 hours after the sampling period

NYC-WTC_000134257

NYC 9/11 Public Portal Document

The precision check for manual methods is based on a comparison of the concentrations measured by two samplers that collected data side-by-side during the same specific time period. To ensure that the two collocated samplers duplicate similar conditions during monitoring specific rules are enforced: The two collocated $PM_{2.5}$ samplers must be within 4 meters of each other and particulate matter samplers must be at least 1 meter apart to preclude airflow interference. This 1-meter separation is based on the low volume of sampling. Currently, the $PM_{2.5}$ FRM monitors have a sampling volume of 16.67 L/min. At low concentrations, agreement between the measurements of collocated samplers, since they are expressed as percent differences, may be relatively poor. For this reason, collocated measurements are selected for use in the precision calculations only when both measurements are above 60 g/m^3 for $PM_{2.5}$.

The accuracy check for manual methods involves checking the flow rate of the sampler each calendar quarter.

3.5 Quality Assurance for Gaseous Pollutants

These are some of the measures AIRTEK staff take to ensure the quality of data from the continuous gas analysis systems. A "monitoring system" for a given pollutant at a given site usually consists of an inlet tube (called a "probe"), an automatic electronic analyzer and a data acquisition system (possibly connected to multiple instruments) and/or a strip chart recorder.

- **Traceability of standards:**
    - Gaseous pollutant concentration standards (in compressed-gas cylinders or in permeation tubes) traceable to a NIST-traceable reference material (NTRM) or to a NIST-certified gas manufacturer's internal standard (GMIS)
    - Ultraviolet photometers (for ozone) certified against a NIST-certified reference UV photometer at EPA
    - mass flow meters (inside multigas dilution/gas phase titration calibrators) certified traceable to NIST standards
    - flow calibrators (bubble meters and/or dry flow calibrators) certified NIST-traceable
    - temperature, pressure, etc. certified NIST-traceable
- **Multipoint calibrations:** The sample collection staff notes the monitoring system's response to multiple known concentrations, adjusting the system if necessary to read correctly. This is done quarterly, after maintenance or repair and when a zero/span check is out of range.
- **Zero/span checks:** The sample collection staff or an automated system records the monitoring system's response to pure air, then to a concentration near its upper range limit (at least once every 2 weeks).
- **Precision checks:** The sample collection staff or an automated system records the monitoring system's response to a known concentration of a roughly consistent value (every 2 weeks). (In practice, this is usually combined with the zero/span check.)
- **Performance audits:**

NYC-WTC_000134258

NYC 9/11 Public Portal Document

- Quarterly audits: The IH Quality coordinator using a different calibrator and different gas standards (or a different photometer) notes the monitoring system's response to multiple concentrations. Normally, this is done quarterly for each monitor.

- **Data audit:** Airtek Data Manager (not the operator of the monitoring system in question) verifies the highest and one random hourly reading each day for each parameter, and reviews all the data for anomalies.

4.0 DATA REPORTS

Instrumental data will be collected and stored in accordance with the instrument manufacturer's operations manual. Raw data (both chemical and meteorological) will be electronically stored and compiled in a manner that will facilitate computation of average concentrations. Accurate working files of all documentation, including logbooks, original data, calculations, deviations from approved procedures, and data review and validation, will be maintained by the Airtek data Manager.

The laboratories shall provide all deliverables in a format that will allow ready compilation and assessment of the data, as appropriate. The laboratory will report all quality control sample results for each batch of samples. The laboratory will not know which samples are duplicates and will report them as primary samples. Data for all samples will be provided with a copy of the Chain of Custody form. For each record sample, the laboratory report will include, at a minimum:

- Sample identification number assigned by the field sampling team;
- Date the sample was collected;
- Date the sample was extracted;
- Date the sample was analyzed;
- List of all target analytes for the method that lists the following data for each target analyte:
- quantity (concentration) found in sample,
- units of measure (e.g., micrograms per liter, milligrams per kilogram),
- detection limit and reporting limit with unit of measure,
- analytes reported below detection limit, etc.; and
- Non-conformance summary identifying any known failure to comply with the QAPP or Sampling and Analysis Plan such as the following:
    - exceeded holding times,
    - failure to achieve required detection limits,
    - poor surrogate recovery or poor duplicate precision,
    - unidentified samples or custody forms,
    - broken custody seals, and
    - uncalibrated or improperly calibrated instruments.

4.1 Laboratory Reports and Chain of Custody Forms

The laboratory will send copies of reports, including data validation documentation to the Airtek QA Officer and a copy to the Airtek Project Manager for the project files. These reports will include a copy of the Chain of Custody form. The laboratory will retain a copy of all data reports and Chain of Custody forms.

NYC-WTC_000134259

NYC 9/11 Public Portal Document

5.0 DATA VALIDATION AND QUALITY ASSURANCE AUDIT

This section outlines the procedures necessary for the data validation and quality assurance audit, which ensures the accuracy of the results.

5.1 Data Validation

Data validation is a systematic procedure of reviewing a body of data against a set of established criteria so as to provide a specified level of assurance of its validity prior to its intended use. The review of the data will include an audit of the quality control samples—the laboratory's method blanks, field blanks, spikes, and surrogate recoveries. These quality control samples allow a direct check on the variability in the methods of analysis and sampling and in the sample matrix itself. The data will be reviewed by the laboratory's QA Officer for compliance to the technical specifications and completeness. The laboratory will provide a non-conformance summary as appropriate for the analytes determined. Included in the non-conformance summary will be notification of sample receipts. This will include information regarding problems with sample packaging, Chain of Custody and sample preservation. A preliminary review for deviations from method protocols including holding times, surrogate recoveries, and spike recoveries will be reviewed.

The QA Officer will evaluate a number of criteria including the following:

- Chain of Custody completeness;
- Analyses completed versus analyses planned;
- Time held versus holding times;
- Laboratory blanks (method and instrument);
- Laboratory Control Sample;
- Trip and field blank results; and
- Duplicate analyses precision.

Deficiencies discovered by the contracted laboratory QA Officer will be documented and communicated to the Airtek QA Officer, the Project Manager, and the Laboratory. The impact of deficiencies on use of the data will be evaluated by the Airtek QA Officer and the Project Manager.

5.2 Laboratory Audits

During the laboratory analyses, Airtek QA Officer will be in direct contact with the laboratory to check on the project status. Any technical concern will be discussed during these updates, and formalized in writing by the contracted laboratory. A telefax may be used. Any significant problems impacting either the holding times, or the analytical methodologies, or the deliverable package will be determined.

5.3 Field Audits

The purpose of QA field audits is to ensure compliance with the approved SAP and QAPP. During the performance of the sampling procedures, the QA Officer will make on site audits. Deviations from the approved plans will be brought to the attention of the Field Manager and the Project Manager. All deviations will be recorded in the QA Officer's log and field notebook of

NYC-WTC_000134260

NYC 9/11 Public Portal Document

the sampling team being audited. Examples of non-compliance or deviations from the plans are given below:

- Not wearing appropriate PPE;
- Improper documentation;
- Failure to collect field blanks or duplicates;
- Improper sampling equipment;
- Unauthorized changes in sampling locations or sampling procedures; and
- Improper field equipment decontamination.

6.0 CORRECTIVE ACTION

If the validity of the data should become suspect during performance of the QA/QC procedures identified in this plan, then corrective actions will be initiated. The actual trigger, as well as the form of the appropriate corrective action, is dependent on the specific method/procedures, time at which the error was detected and the type of the error that has occurred. For analytical instruments, the corrective action may include:

- Recalibration or standardization of the instrument;
- Preparation of new standards; Repair or replacement of equipment, including columns, detectors, etc.; and
- Reanalysis of samples.

The laboratory's internal Standard Operating Procedures define corrective action. These procedures will be requested by all laboratories providing analytical services to Airtek under this project and will be appended t the QAPP when received.

Upon determining that deviations from the prescribed protocols contained in the QAPP have occurred, the Laboratory Data Validation Officer will be notified. Within 48 hours, written confirmation of the occurrence and the corrective action taken will be provided to the client.

7.0 ASSESSMENT AND OVERSIGHT

The following subsections describe assessment and oversight measures to be taken during data collection. These actions are separate from the final data validation described in Section 5.1.

7.1 Assessments and Response Actions

The Data Manager will be responsible for routine assessment of data collection and for initiating necessary response actions. The routine assessment will include review of data to ensure that instruments are functioning and collecting information. Routine assessment actions will also include review of the QC measures described in Section 3.6. Response actions will be initiated immediately upon discovery of a problem. The Data Manager will perform these response actions as needed to collect data that meet the project requirements.

The Project QA Officer will conduct occasional field oversight of sampling and analysis activities. During at least one of these visits the Project QA Officer will submit performance audit samples to be analyzed. During field oversight, the Project QA Officer will visually observe sample collection and analysis to verify that the procedures outlined in this QAPP are being followed and that any corrective action initiated previously is being continued.

Discrepancies to be noted in site log.

NYC-WTC_000134261

NYC 9/11 Public Portal Document

Field documentation of samples, calibration, QC measures, and corrective action will also be reviewed. In addition, the Project QA Officer will conduct at least one review of data and record management systems at Purdue during the field monitoring period. During this review, the Project QA Officer will verify that the data management procedures are being followed. Any issues identified during these reviews will be discussed with appropriate personnel and addressed immediately.

7.2 Reports to Management

During project data collection, the Data Manager will be responsible for routine assessment and response actions as described above. If response actions are taken, the Data Manager will inform the Project QA Officer of the reason for these actions and the results. The Project QA Officer will then review this information to verify that the QAPP is being followed and to determine if changes to the QAPP are needed. If conditions requiring corrective action are identified during a review conducted by the Project QA Officer, a brief report will be issued to the Project Coordinator, EPA Region 2 and the Data Manager; however, corrective action will be initiated immediately based on verbal discussion during the review.

The draft and final project reports will contain all valid monitoring data expressed as hourly and daily values. The report will incorporate graphical representations of the location of all measurements taken. The report will also contain the numerical and qualitative results of all QC measures on all measurement systems and will compare them to the applicable acceptance criteria. In the event that data must be invalidated, the reason for data invalidation shall be identified with the resultant corrective action. In addition, the report will include a brief summary of corrective actions taken during field data collection. The report will discuss the impact of these corrective actions on data quality.

The Data Manager will provide copies of all data and reports to the Airtek Project Coordinator, the Airtek QA Officer, and to USEPA Region 2. Requests for copies of reports shall be directed to the Airtek Project Coordinator and the Owner for purposes of determining whether they contain Confidential Business Information. Reports and data shall otherwise be available for public distribution.

8.0 DATA VALIDATION AND USABILITY

All data generated under this QAPP will be reviewed and validated by the Data Manager. Original raw data review will be done within two business days after the data were recorded from measurement. Data will be validated and verified by comparison with instrumental performance parameters as identified in the applicable section of this QAPP or instrument operation manual.

Data will be evaluated for compliance with stated objectives for representativeness, precision, and accuracy. This will be done by comparing results of QC and calibration activities to the stated data quality criteria (Section 3). However, the evaluation process used to find and correct an error may not be defined in this QAPP because not all possible errors and corrections can be anticipated.

9.0 EXCEEDANCE NOTIFICATION

Notification

NYC-WTC_000134262

NYC 9/11 Public Portal Document

The USEPA Region 2, NYCDEP, NYSDEC and the NYSDOL will be notified as promptly as reasonably possible via phone and electronic mail of any exceedance of either a Target Air Quality Level or a USEPA Site Specific Trigger Level and will be notified promptly of any corrective actions taken in connection with a Target Air Quality Level exceedance or an USEPA Site Specific Trigger Level exceedance.

Monitoring Data

All Sampling results collected pursuant to this specification, in suitable electronic form, will be promptly provided to the USEPA Region 2, NYCDEP, NYSDEC and NYSDOL offices weekly and exceedances will be reported as provided above.

NYC-WTC_000134263

NYC 9/11 Public Portal Document

Appendix A

Measurement Quality Objectives for PM10 and PM2.5 – [Ref. Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Part 1, Appendix No: 3,]

Table A-1 - Measurement Quality Objectives - Parameter PM2.5

Requirement	Frequency	Acceptance Criteria	40 CFR Reference
Filter Holding Times	all filters	< 30 days before sampling	Part 50, App.L
Pre-sampling	"	< 10 days at 25 oC	
Post-sampling weighing		< 30 days at 4oC	
Sampling Period	All data	1380-1500 minutes or value if < 1380 and exceedance of NAAQS	Part 50, App.L Sec 3.3
Reporting Units	All data	g/m3	Part 50.3
Detection Limit		2 g/m3	Part 50, App.L Sec 3.1
Lower DL	All data	200 g/m3	Part 50, App.L Sec 3.2
Upper Conc. Limit	All data		
Filter			
Visual defect check	All Filters		
Filter Conditioning			Part 50, App.L Sec 6.0
Environment	All Filters	4 hours minimum	
Equilibration	"	20-23 C	
Temp. Range	"	+/-2° C over 24 hr " "	Part 50, App.L Sec 8.2
Temp. Control	"	30% - 40% RH	"
Humidity Range	"	+/- 5% RH over 24 hr.	"
Humidity Control	"		"
Lot Blanks	3 filters per lot	less than 15 g	"
Lab QC Checks			
Field Filter Blank		±30 g change between weighings	Part 50, App.L Sec 8.2
Lab Filter Blank	3 per weighing session	±15 g change between weighings	
Balance Check	beginning, every 10th samples, Sec. 7.9	< 3 g	
	end	±15 g change between weighings	
Duplicate Filter Weighing	1 per sample batch		
Calibration/Verification			
Flow Rate (FR) Calibration	If multi-point failure	± 2% of transfer standard ±	Part 50, App.L, Sec 9.2
FR multi-point verification	1/yr	2% of transfer standard ±	Part 50, App.L, Sec 9.2.5
One point FR verification	1/4 weeks	4% of transfer standard 80	
External Leak Check	every 5 sampling events	mL/min	Part 50, App.L, Sec 7.4
Internal Leak Check	every 5 sampling events	80 mL/min	Part 50, App.L, Sec 7.4
Temperature Calibration	If multi-point failure	± 2% of standard	Part 50, App.L, Sec 9.3
Temp multi-point verification	on installation, then 1/yr	± 2 of standard	Part 50, App.L, Sec 9.3
One- point temp Verification	1/4 weeks	± 4E of standard	Part 50, App.L, Sec 9.3
Pressure Calibration	on installation, then 1/yr 1/4	±10 mm Hg	Part 50, App.L, Sec 9.3
Pressure Verification	weeks	±10 mm Hg	Part 50, App.L, Sec 9.3
Clock/timer Verification	1/ 4 weeks	1 min/mo	Part 50, App.L, Sec 7.4
Accuracy			
FRM performance evaluation	1	± 10%	Part 58, App A, Sec 3.5
Flow Rate Audit	1/2wk (automated)	± 4% of audit standard	

NYC-WTC_000134264

NYC 9/11 Public Portal Document

	4/yr (manual)		
External Leak Check	4/yr	< 80 mL/min	not described
Internal Leak Check	4/yr	< 80 mL/min	not described
Temperature Audit	4/yr	+ 2C not described	not described
Pressure Audit	4/yr (?)	±10 mm	not described
Balance Audit	1/yr	Manufacturers specs	not described
Precision			
Collocated samples	every 6 days for 25% of sites	CV < 10%	Part 58, App.A, Sec 3.5/5.5
Single analyzer	1/3 mo.	CV < 10%	not described
Single Analyzer	1/ yr	CV < 10%	not described
Reporting Org.	1/ 3 mo.	CV < 10%	not described
Calibration & Check Standards			
Flow Rate Transfer Std.	1/yr	±2% of NIST-traceable Std.	Part 50, App.L Sec 9.1 and 9.2
Field Thermometer	1/yr	± 0.1 C resolution	not described
		± 0.5 C accuracy	not described
Field Barometer	1/yr	± 1 mm Hg resolution	not described
		± 5 mm Hg accuracy	not described
Working Mass Stds.	3-6 mo.	0.025 mg	not described
Primary Mass Stds.	1/yr	0.025 mg	not described

NYC-WTC_000134265

NYC 9/11 Public Portal Document

Table A-1 - Measurement Quality Objectives - Parameter PM10 (Dichotomous Sampler)

Requirement	Frequency	Acceptance Criteria	Reference	Information/Action
Reporting Units	All data	µg/m3	40 CFR, Pt 50.7	
Filter Checks				
Visual defect check Filter	All filters	See reference	Vol II, MS 2.10.4	Discard any defective filters
Integrity				
Collection efficiency	Purchase	99 %	40 CFR, Pt 50,	
Integrity	Specification	± 5 µg/m3	App M, S 7.2	As measure by DOP test (ASTM-2988). Reject shipment.
Alkalinity		< 25.0		
Filter Conditioning	All filters	microequivalents/gram		
Equilibration time	"		40 CFR, Pt 50,	Following 2 months storage
Temperature range	"	at least 24 hours	App M, S 9.3	at ambient temp and
Temperature control	"	15 to 30° C 4	CFR, Pt 50, App	relative humidity.
Humidity range	"	± 3 C	M, S 7.4	Repeat equilibration
Humidity control		20 to 45 % relative humidity		Keep thermometer in balance room and record temperature daily.
		± 5 % relative humidity		Keep hygrometer in the balance room and record humidity daily.
Equipment				
Sampler	Purchase specification	40 CFR, Pt 53.9		
Flow rate transfer standard	Purchase specification	40 CFR, Pt 50, App M, S 7.3		
Analytical balance	Purchase specification	40 CFR, Pt 50, App M, S 7.5		
Mass reference standards	Purchase specification	Vol II, MS 2.10.4		
		Vol II, MS 2.10.4		
Detection Limit				
LDL	Not applicable	Not applicable	40 CFR, Pt 50, App M, S 3.1	The lower limit of the mass concentration is determined by the repeatability of filter tare weights, assuming the nominal air sample volume for the sampler.
Sampler Calibration			40 CFR, Pt 50, App M, S 7.1	
Flow control device	On installation, after repairs, after out-of-limits flow check	<4% difference from manufacturers spec and actual	Vol II, MS 2.10.2	Adopt new calibration curve if no evidence of damage, otherwise replace.
Elapsed time meter	On receipt and 1/6 months	± 15 min	40 CFR, Pt 50, App M, S 7.1	Adjust or replace.
Flow-rate transfer Standard	Periodically	±2% over the expected range of ambient conditions	40 CFR, Pt 50, App M, S 8.2	Checked against NIST-traceable primary standard.
			Vol II, MS 2.10.1	
			Vol II, MS 2.10.1	
Balance Calibration	1/year		Vol II, MS 2.10.4	Calibrate and maintain according to the manufacturer's recommendations.

NYC-WTC_000134266

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Precision Single analyzer Reporting organization	1/6 days 1/ 3 months	# 5 Fg/m for conc. 80 µg/m3 7% for conc. >80 µg/m 95% CI < ± 15%	40 CFR, Pt 50, App M, S 4.1 40 CFR, Pt 58, App A, S 5.3 EPA-600/4-83-023	Both PM10 values must be > 20 µg/m .
Accuracy Single analyzer Annual accuracy	Quarterly (all sites yearly)	None 95% CI # ± 20%	40 CFR, Pt 58, App A EPA-600/4-83-023 Vol II, App 15, S 6	Transfer standards different then those used in calibration. Recalibrate quarterly (all sites before any additional sampling. Invalidate data to last acceptable flow yearly) check if difference > 10%.
QC Checks Field calibration flow check "Standard" filter weighing Reweighing filters 1/month Balance zero and Calibration check	1/month at beginning of weighing day 5 exposed and 5 unexposed/day every fifth filter	Percentage difference # ±7 from sampler's indicated flow rate or # ± 10 % from design condition flow rate ± 20 g of original weight ± 20 g of original weight ± 2 g at 10 mg ± 4 g at zero ± 2 g at 10 mg	40 CFR, Pt 50, App M, S 8.2 Vol II, MS 2.10.3 Vol II, S 2.10.4 Vol II, S 2.10.4 Vol II, S 2.10.4	Trouble shoot and recalibrate sampler. Trouble shoot and reweigh. Trouble shoot and reweigh. Trouble shoot and reweigh.

NYC-WTC_000134267

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Part III

Health and Safety Plan
for
133-135 Greenwich/21-23 Thames Street
Deconstruction/Demolition Project

Prepared for:

The Copper Group Inc.
666 5th Avenue, Suite 180
New York, NY 10103

Prepared by:

Airtek Environmental Corp.
39 West 38th Street
New York, NY 10018

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NYC 9/11 Public Portal Document

TABLE OF CONTENTS

1.0 INTRODUCTION 4
1.1 BACKGROUND 4
1.1.1 Environmental Characterization 4
1.2 SITE DESCRIPTION 5
1.3 PURPOSE 5
2.0 HEALTH AND SAFETY PROCEDURES 6
2.1 PERSONNEL RESPONSIBILITIES 6
2.1.1 Contractor 8
2.1.2 Contractor's Site Safety Officer (CSO) 8
2.1.3 Owner's Environmental Consultant 9
2.2 HEALTH AND SAFETY HAZARD ANALYSIS AND RISK ASSESSMENT 10
2.2.1 Preliminary Evaluation 10
2.2.2 Task Hazard Analysis 10
2.2.3 Physical Hazards 18
2.2.4 Chemical Hazards 19
2.2.4.1 Additional Identified Chemicals 19
2.2.5 Biological Hazards 20
2.2.5.1 Insects 20
2.2.5.2 Rodents 20
2.2.5.3 Mold/Fungi 20
2.3 ENGINEERING CONTROLS 20
2.4 ADMINISTRATIVE CONTROLS AND WORK PRACTICES 21
2.5 PERSONAL PROTECTIVE EQUIPMENT (PPE) 21
2.5.1 Basic PPE Requirements 22
2.5.2 Level C PPE 22
2.5.3 Level B PPE 23
2.5.4 Level A PPE 23
2.6 SAFETY EQUIPMENT 24
2.6.1 Respiratory Protection Program 24
2.6.1.1 Respirator Testing 25
2.6.1.2 Respirator Inspection, Sanitization, and Maintenance 25
2.6.2 Medical Response Equipment 26
2.7 PERSONAL AIR MONITORING 26
2.8 SITE CONTROL 27
2.8.1 Work Zones 27
2.8.2 Personnel and Equipment Decontamination 28
2.8.2.1 Personnel Decontamination Procedure 28
2.8.2.2 Equipment Decontamination Procedure 29
2.8.3 Safety Meetings 29
2.9 TRAINING PLAN 30
2.9.1 Health and Safety Awareness Training 30
2.9.2 Asbestos Training 30
2.9.3 HAZWOPER Training 30
2.10 PERSONAL PROTECTIVE EQUIPMENT TRAINING 31

NYC-WTC_000134269

NYC 9/11 Public Portal Document

2.10.1 Emergency Response Training *31*
2.10.2 Visitor Training *31*
2.10.3 ..... *32*
2.11 HAZARD COMMUNICATION 32
2.11.1 Container Labels *32*
2.11.2 Material Safety Data Sheets (MSDSs) *33*
2.12 ACCIDENT PREVENTION & INVESTIGATION 33
2.13 MEDICAL SURVEILLANCE PLAN 34
2.13.1 Respiratory Protection *34*
2.13.2 Hearing Conservation *34*
2.13.3 First Aid *35*
2.13.4 Medical Emergency *35*
2.13.5.1 Life-Threatening and/or Otherwise Serious Incident 35
2.13.5.2 Non-Life-Threatening Incident 35
2.13.6 Bloodborne Pathogens *36*
3.0 DOCUMENTATION **38**

LIST OF TABLES

TABLE 2-1 ACTIVITY HAZARD ANALYSIS
TABLE 2-2 OSHA PEL, ACTION LEVEL, AND TRIGGER LEVELS

LIST OF FIGURES

FIGURE 1-1 SITE LOCATION AND HOSPITAL DIRECTIONS MAP

LIST OF ATTACHMENTS

ATTACHMENT 1 - LIST OF ACRONYMS
ATTACHMENT 2 – ASBESTOS SURVEY
ATTACHMENT 3 – HASP ACKNOWLEDGEMENT FORM
ATTACHMENT 4 – CONTACTS/EMERGENCY TELEPHONE NUMBERS

NYC-WTC_000134270

NYC 9/11 Public Portal Document

1.0 INTRODUCTION

This Health and Safety Plan (HASP) presents the practices and procedures that the Contractor shall implement and enforce during the deconstruction and demolition of the buildings located at 133-135 Greenwich/21-23 Thames Street in New York City (the Buildings). This HASP will be applicable to all persons entering the Buildings and to all persons working in and around the Buildings. The deconstruction of the Buildings will occur in two phases:

The Abatement Phase of the Deconstruction Project will occur while the work area is placed under negative pressure containment and includes the following general categories: (a) the general area cleanup of WTC dust and debris, (b) removal and disposal of installed porous and certain non-porous building materials and components, (c) cleaning and salvage of certain installed non-porous building equipment and components, (d) removal of building materials containing asbestos which were present in the Building prior to September 11, 2001 (referred to herein as "ACBM"), primarily within the Building interior, (e) packaging of asbestos and other regulated waste at generation points, movement of containers to the decontamination unit and movement of decontaminated containers to waste loading.

The Deconstruction Phase of the Deconstruction Project will occur following the Abatement Phase and removal all porous and contaminated materials, and will follow conventional demolition procedures. Deconstruction activities include the following general categories: (a) floor-by-floor deconstruction and removal of the remaining "clean" building components including exterior masonry walls, sub-flooring and structural wood frame components, and (b) general site work, including fencing, erecting scaffolding/hoists, paving, if any, and drainage. Summaries of the potential physical, chemical and biological hazards that may be encountered during these tasks and the associated hazard control methods are presented in Table 2-1.

The clean-up and abatement will be conducted so that the Building can be safely deconstructed in compliance with applicable law to allow for redevelopment of the site.

The Contractor shall be supported on this project by the Owner's Environmental Consultant who will provide environmental testing, air sampling and asbestos project monitoring and serve the function of Environmental Consultant/Project Monitor.

1.1 BACKGROUND

The events of September 11, 2001, which caused the destruction of the WTC Towers generated massive debris and dust. While not physically damaged, some of this WTC dust entered into the 133-135 Greenwich/21-23 Thames Street Buildings. The Buildings had been partially reoccupied after September 11, 2001 following clearance of debris and unspecified cleaning to permit re-occupancy.

1.1.1 Environmental Characterization

NYC-WTC_000134271

NYC 9/11 Public Portal Document

The Owner contracted with Airtek Environmental Corp. to conduct Asbestos Surveys and General Building Characterization for the 133-135 Greenwich/21-23 Thames Street buildings. Due to the proximity of these buildings to the WTC, and the extensive environmental tests carried out at the adjacent 130 Liberty Street (Deutsche Bank) Building, it is assumed for the purpose of this HASP that similar potentially contaminated WTC dust is present at this site. The settled dust in and on the Building may contain elevated levels of five COPCs designated by the United States Environmental Protection Agency (USEPA) as being associated with the WTC dust (asbestos, dioxin, lead, polycyclic aromatic hydrocarbons [PAHs], and crystalline silica) as well as other contaminants suspected of being present in the Buildings including polychlorinated biphenyls (PCBs) and heavy metals (antimony, barium, beryllium, cadmium, chromium, copper, manganese, mercury, nickel and zinc).

The Owner has retained Airtek Environmental Corp. to conduct Environmental Investigations of the buildings for additional unidentified asbestos containing building materials (ACBM). These environmental reports are included as Attachment 2 to this HASP.

The requirements outlined within this Health and Safety Plan are based upon the data collected to date. As additional information is obtained during the course of the Abatement and Demolition activities, these requirements will be amended if necessary to protect workers or the public.

1.2 SITE DESCRIPTION

The Property is currently developed for a combination of commercial and multi-family residential use. The Property includes a vacant two-story commercial building that was constructed on the northwestern portion of the Property circa 1980. The building was most recently occupied by a pizza shop, a coffee shop, a Japanese restaurant, an Indian restaurant, a shoe repair shop, and second floor professional (doctors') offices. The Property also includes a vacant five-story building that was constructed on the southeastern portion of the Property prior to 1894. This building includes two ground floor tenant spaces most recently occupied by a sandwich shop, a Western Union office, and approximately eight residential units.

The Property is located within the urban commercial downtown Financial District of Manhattan, New York City, immediately south of the former World Trade Center site and adjacent to the vacant Deutsche Bank Building. The Property is bounded to the west by Greenwich Street, to the north by a four story mixed-use (commercial/residential) building, to the east by Finance and Economics High School, and to the south by Thames Street.

1.3 PURPOSE

This document presents the safety procedures and practices to be followed during all Abatement Phase site activities to ensure the safe completion of tasks. The procedures and practices herein are designed to prevent occupational injuries and exposures to chemical, physical and biological hazards to workers at the Site. The procedures are presented to ensure compliance with all applicable government agencies and regulations, including, but not limited to requirements and protocols established by: the Occupational Safety and Health Administration (OSHA); the

NYC-WTC_000134272

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National Institute of Occupational Safety and Health (NIOSH); the United States Environmental Protection Agency (USEPA); the New York State Department of Conservation (NYSDEC); the State of New York, New York State Department of Labor (NYSDOL); the New York City Department of Environmental Protection (NYCDEP); and the City of New York.

This document incorporates relevant health and safety guidance developed for the Lower Manhattan Development Corporation's 130 Liberty Street building Deconstruct Project as described in their May 2005 Health and Safety Plan for that project.

Compliance with this HASP is required due to hazards associated with the Buildings' current condition and anticipated Abatement Phase activities. This HASP is based upon current knowledge of conditions at the Site and will be updated as new information (including personal and environmental sampling and field observations) becomes available and/or conditions change within the Building.

2.0 HEALTH AND SAFETY PROCEDURES

This section identifies the principal hazards associated with the tasks to be performed during the cleaning, asbestos and COPC abatement, and interior component removal and conventional demolition activities, and establishes standard safety and health procedures for the Contractor, the Subcontractors and anyone who comes onto the site. The content of this HASP is designed to anticipate, identify, evaluate, and control safety and health hazards for the work activities to be performed during this project. All on-site work activities by any Subcontractors and their designees shall be performed in accordance with this HASP, and in accordance with applicable federal, state, and local regulations.

The levels of personal protection and the procedures specified in this Plan are based on the best information available from validated reference sources (i.e., OSHA, NIOSH) and current site data. Therefore, the guidelines presented in this HASP represent the minimum health and safety requirements to be observed by all on-site personnel engaged in this project. Discovery of currently unknown site conditions or changes in the scope of work will necessitate the reassessment of the protection levels, controls, and procedures stated herein. All amendments to this HASP must be made in consultation with the Regulatory Agencies, and must have prior written approval by the Environmental Consultant's Certified Industrial Hygienist (CIH) and the Contractor's Project Manager.

2.1 PERSONNEL RESPONSIBILITIES

The Contractor, Subcontractor and other personnel on-site shall review and understand this document prior to working on-site.

All personnel shall:

NYC-WTC_000134273

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1. Participate in initial site orientation/training as described in Section 2.9.1, and daily safety meetings, and shall provide any required documentation, medical clearance, fit test, asbestos certification, etc. prior to starting work on the site. Documentation requirements are determined by activities to be performed.

2. Sign the HASP Acknowledgement Form and other required documents after orientation to indicate that they participated in orientation and understood the information presented in orientation.

3. Follow the designated safety and health procedures; be alert to the hazards associated with working on the site, and exercise reasonable caution at all times.

4. Any questions or concerns about this HASP shall be directed to the on-site Contractor Project Manager and/or the Site Safety Officer.

5. Take all reasonable precautions to prevent injury to themselves and to their fellow employees, and being alert to potentially harmful situations.

6. Obey all applicable laws and regulations relating to health and safety.

7. Ensure that activities do not impact the neighboring community.

8. Perform only those tasks that they have been trained to complete and can do safely.

9. Notify their supervisor of any special medical conditions (i.e., allergies, contact lenses, diabetes) that may affect their ability to perform certain tasks.

10. Notify their supervisor of any prescription and/or non-prescription medication that they may be taking that might cause drowsiness, anxiety, or other unfavorable side affects.

11. Learn and comply with Site security requirements.

12. Comply with the Site's prohibition on drug and alcohol use, smoking, horseplay, and restricted eating/drinking areas.

13. Practice good housekeeping by keeping the work areas neat, clean and orderly.

14. Immediately reporting all injuries, incidents and near-misses to the designated supervisor.

15. Properly use PPE specified by the contractor and this HASP, based on the results of air monitoring.

16. Properly maintain their designated PPE per manufacturers' recommendations.

17. Comply with the HASP and all health and safety recommendations and precautions.

NYC-WTC_000134274

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18. Notify their supervisor of any Site conditions or concerns which are not addressed by the protective measures specified in this HASP, or which are addressed but the employee does not understand the protective requirements specified herein.

2.1.1 Contractor

1. The Contractor Project Manager shall have overall responsibility for ensuring health and safety protection on the site and for ensuring that all elements of the HASP are implemented during all phases of the daily on-site activities of this project.

2. The Contractor Project Manager shall oversee the Contractor's responsibility to monitor for visible emissions.

3. The Contractor shall notify the Environmental Consultant's CIH of any need to change or amend any aspect of this HASP and/or seek input with regard to interpretations of the HASP in concert with the designated Safety Officers of the Subcontractors.

4. The Contractor shall consult with and coordinate any modifications to the HASP with the Environmental Consultant's CIH; will recommend corrective actions for identified deficiencies; and will oversee the implementation of any corrective actions.

5. The Contractor shall coordinate the health and safety activities of all the Contractor and Subcontractor personnel to ensure the requirements of the HASP are followed and shall communicate with all parties when changes occur on-site or when conditions impacting the site occur concerning the response actions to be taken.

6. The Contractor shall direct the implementation and enforcement of this HASP and consult with the Subcontractors regarding the health and safety procedures and practices to be used on this project.

7. The Contractor shall enforce the requirements of this HASP with respect to health and safety, air monitoring requirements and waste management requirements.

8. The Contractor shall perform on-site training and the day-to-day on-site implementation and enforcement of the HASP.

9. The Contractor shall ensure site compliance with federal/state/local regulations and all aspects of this HASP including, but not limited to; Performing activity hazard analyses, Providing guidance concerning the use of PPE, Ensuring site control, Developing standard operating procedures to minimize hazards such as the use of engineering controls.

10. The Contractor shall provide all necessary PPE and have "extras" for authorized visitors and agency representatives. ✓

2.1.2 Contractor's Site Safety Officer (CSO)

NYC-WTC_000134275

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1. The Contractor shall have a Site Safety Manager (CSO) on-site during the project on a full time basis for the entire duration of on-site field activities. If operations are performed during more than one work shift per day, a qualified Contractor Site Manager shall be present for each shift.

2. The CSO shall have authority to stop any and all work activities if unacceptable health and safety conditions exist or if actions occur that may affect safety and health conditions for personnel or the environment. The authority to stop work shall include an automatic work stoppage if visible emissions leave the Site perimeter.

3. The CSO shall act as the primary contact during any on-site emergency situation.

4. The CSO shall conduct accident investigations and prepare accident reports, prepare and maintain records of corrective actions taken on-site and document health findings into a project-dedicated logbook

5. Additionally, the CSO is responsible for logging all site visitors, checking for current medical and fit test certifications and applicable federal/state/local asbestos training for all those entering containment. The CSO does not provide specialized training for specific cleaning, abatement or interior component removal portions of the work. This shall be provided by each Subcontractor for its personnel. This does not excuse the CSO, however, from responsibility to see that this is done. ✓

6. The CSO shall document each orientation performed and requires that each person receiving the orientation complete, sign and date the HASP acknowledgement.

7. The CSO shall review the following documentation from each Subcontractor to complete the administrative record for the site: name of Subcontractor's safety officer; list of emergency contact phone numbers; confirmation of current worker fit tests, medical clearances and asbestos training & certification for each Subcontractor employee; and Subcontractor HASP, including Hazard Communication Program, Fall Protection Program, Respiratory Protection Program, personal air monitoring program. ✓

8. The CSO shall review MSDSs of products proposed for use at the site. If any product is hazardous, the CSO shall investigate potential alternate products that are non-hazardous.

2.1.3 Owner's Environmental Consultant

The Owner's Environmental Consultant shall provide a Certified Industrial Hygienist (CIH) and field industrial hygiene personnel during the project fieldwork. The CIH shall manage developing and modifying this HASP, directing field industrial hygiene personnel responsible for the execution and monitoring of any health and safety activities at the site, review of monitoring data generated during the site work, walk-through safety and health spot field inspections, and advising the Owner and Contractor of unacceptable conditions identified that may affect safety and health for personnel or the environment. The responsibilities of the Owner's Environmental

NYC-WTC_000134276

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Consultant shall include monitoring for visible emissions as detailed in the Environmental Monitoring Specification.

2.2 HEALTH AND SAFETY HAZARD ANALYSIS AND RISK ASSESSMENT

2.2.1 Preliminary Evaluation

The work to be conducted at 133-135 Greenwich/21-23 Thames Street comprises construction activities and, as such, falls under Title 29 of the Code of Federal Regulations, Part 1926 (29 CFR 1926), the OSHA Construction Standard.

An evaluation of the anticipated general work activities was performed (discussed later in this section) that included a Hazard Analysis for each general task/activity to identify associated hazardous conditions, appropriate employee protection methods and PPE requirements. The evaluation of potential site conditions and activity hazards is an ongoing process and shall continue throughout the duration of the project.

Potential hazards during the Abatement Phase effort include the following:

- Physical – Excessive noise; inclement weather; heat stress; cold stress; manual lifting; slips and falls; structural integrity; working at elevation; electrical safety; heavy equipment operation; and other general construction hazards.
- Chemical – Asbestos, silica, PAHs, dioxins, man-made vitreous fibers (MMVF), antimony, cadmium, nickel, lead, barium, chromium, zinc, manganese, copper, beryllium, PCBs, mercury, copper, zinc, cristobalite and quartz.
- Biological – Mold; rodents; insects.
- Radiological – None anticipated.

2.2.2 Task Hazard Analysis

The scope of work for the 133-135 Greenwich/21-23 Thames Street project consists of five (5) general tasks, as follows:

Task 1: Environmental Consultant monitoring including work area air sampling during preparation decontamination and demolition activities; clearance air sampling upon completion of asbestos and COPC abatement and removal activities; and waste characterization sampling.

Task 2: Maintain temporary services including water, fire protection and GFCI protected electrical.

Task 3: Preparation for and general area cleanup of WTC dust and debris, which as stated by the regulators must be treated as asbestos (at a minimum) and which may contain other COPCs;

NYC-WTC_000134277

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removal and disposal of installed porous and certain nonporous building materials and components contaminated by settled dust and debris; cleaning and salvage of certain installed non-porous building equipment and components contaminated by settled dust and debris; removal of ACBM from the Building; packaging and loading of regulated waste as identified during the implementation of the Waste Sampling and Management Plan.

Task 4: Deconstruction activities including the cleaning of the building exterior (i.e. building washdown), floor-by-floor deconstruction and removal of the remaining "clean" building components including exterior brick wall, flooring and structural wood frame components.

Task 5: General site work, including fencing, erecting scaffolding/hoists, paving, if any, and drainage. Summaries of the potential physical, chemical and biological hazards that may be encountered during these tasks and the associated hazard control methods are presented in Table 2-1.

NYC-WTC_000134278

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Table 2-1

Task 1: Environmental Consultant Air Monitoring and Waste Characterization

Equipment Required: Air sampling equipment, Waste Characterization e.g. (scoops, bowls, scale, safety blades, sample containers), PPE

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
1	Mobilization (Transporting employees, materials and equipment to site)	Level D	Use of vehicles	Vehicle and driving safety	Contractor Specific
2	Unloading equipment on the ground level	Level D	Lifting	Proper lifting techniques	Contractor Specific
			Site security	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Insects	Biological hazard monitoring	
3	Waste characterization sampling	Level C***	Chemical COPC	Hazard Communication PPE	Contractor Specific
			Heat stress	Heat monitoring	Contractor Specific
			Cold stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
4	Area air sampling during abatement activities	Level C***	Asbestos	Avoidance/monitoring	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Heat stress	Heat monitoring	Contractor Specific
			Cold stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Mold	Avoidance	Contractor Specific
			Asbestos	Avoidance/Monitoring	Contractor Specific
5	Clearance air sampling	Level C***	Chemical COPC	Hazard Communication PPE	Contractor Specific
			Heat stress	Heat monitoring	Contractor Specific
			Cold stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Asbestos	Avoidance/monitoring	Contractor Specific

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Still here, what is this!

Procedure – Asbestos NYC DEP/DOL ↳ CERTIFICATION

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Task 2: Maintaining Temporary Services

Equipment required: Hand and power tools, ladders, PPE

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
1	Mobilization (Transporting employees, materials and equipment to site)	Level D	Vehicle Incidents	Vehicle and driving safety	Motor Vehicles and Equipment Program
2	Unloading equipment on the ground level	Level D	Lifting	Proper lifting procedures	
			Heat Stress	Heat monitoring	
			Cold Stress	Cold monitoring	
			Slip/trip/fall	Housekeeping	Housekeeping Program
			Trespassers	Site security	
			Pinch points	Materials handling	
			Hand tools	Proper use techniques	
3	Maintain basic utilities to include: – Temporary GFCI protected electrical	Level C ***	Chemical COPC plus plumbing chemicals	Hazard Communication PPE	Hazard Communication Program, 29 CFR 1910.120 (a) (i)
			Slip/trip/fall	Housekeeping	Housekeeping Program
			Pinch points	Materials handling	
			Work from elevation	Fall protection Proper ladder use.	Elevated work-Fall Protection Program
			Hand tools	Proper use techniques	
			Hot Work	Hot Work permitting Fire prevention	Welding, Cutting and Burning - Hot-Work Procedure
			Wet feet	Avoidance/techniques	
			Electrical safety	Electrical safety - LO/TO	Electric -Temporary
			Stored hazardous energy	LO/TO program	Lockout/Tagout Procedures
			Elevator malfunction	Maintain certification and operate according to manufacturer instructions	

* As described in Section 5.5

NYC-WTC_000134280

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Task 3: General area cleanup of WTC dust and debris, as stated by the regulators must be treated as asbestos (at a minimum) and which may contain other COPCs; removal and disposal of installed porous and certain non-porous building materials and components contaminated by settled dust and debris; cleaning and salvage of certain installed non-porous building equipment and components contaminated by settled dust and debris; removal of ACBM within the Building; packaging of regulated waste as identified during the implementation of the Waste Sampling and Management Plan found within Section 1 of the Deconstruction Plan at generation points movement of containers to decontamination unit and movement of decontaminated containers to waste loading area; and cleaning of limited, designated exterior surfaces to facilitate the erection of the man-hoist and the crane.

Equipment required: Heavy cleaning equipment, HEPA vacuums, hand/power tools, ladders, scaffolding, lifting equipment, PPE

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
1	Mobilization (Transporting employees, materials and equipment to site)	Level D	Vehicle use	Vehicle and driving safety	Contractor Specific
2	Unloading equipment on the ground level	Level D	Lifting	Proper lifting techniques	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
3	Constructing containment areas and placing air handling units on the floors	Level C***	Chemical COPC plus adhesives	Hazard Communication PPE	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Lifting	Proper lifting techniques	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Work from elevation	Fall protection	Contractor Specific
			Use of scaffolds	Scaffold safety	Contractor Specific
			Hand and power tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
5	Removal and disposal of installed porous and certain non-porous building materials and components contaminated by settled dust and debris	Level C***	COPC, silica and lead	Follow procedures	Contractor Specific
			Lifting	Proper lifting techniques	
			Noise	Hearing protection	
			Heat stress	Heat monitoring	
			Cold stress	Cold monitoring	
			Slip/trip/fall	Housekeeping	
			Structural damage	Structural integrity / PE inspection	
			Demolition	Follow demolition plan	General Safety Regulations
			Pinch points	Materials handling	
			Work at elevation	Fall protection	Fall Protection Plan
			Hand tools	Proper use techniques	
			Inadequate lighting	Illumination	
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure
6	Cleaning and salvage of certain installed non-porous building equipment and components contaminated by settled dust and debris	Level C ***	COPC, silica and lead	Follow procedures	Contractor Specific
			Lifting	Proper lifting techniques	
			Noise	Hearing protection	
			Heat stress	Heat monitoring	
			Cold stress	Cold monitoring	
			Slip/trip/fall	Housekeeping	
			Structural damage	Structural integrity / PE inspection	
			Demolition	Follow demolition plan	General Safety Regulations
			Pinch points	Materials handling	
			Work at elevation	Fall protection	Fall Protection Plan
			Hand tools	Proper use techniques	
			Inadequate lighting	Illumination	
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure
			Torch Cutting	Generation of lead or other toxics, Fire	Compliance with OSHA Lead and cadmium in Construction Standard, Hot work procedures, Cutting procedures

AIR MONITOR & CONTRACTOR TWO PLANS OR ONE THAT BOTH HAVE TO COMPLY WITH.

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NYC 9/11 Public Portal Document

Task 3: Cont'd:

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
7	Removal of building materials contaminated with asbestos and ACBM.	Level C***	Chemical COPC	Hazard Communication PPE	Contractor Specific
			Working from Elevations	Fall Protection	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			High pressure water	Pressurized systems	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Noise	Hearing protection	Contractor Specific HOISE STD.
			Inadequate lighting	Illumination	Contractor Specific
			Asbestos	Avoidance/monitoring/PPE	Contractor Specific
			Lead	Avoidance/monitoring/PPE	Contractor Specific
			PCBs	Avoidance/monitoring/PPE	Contractor Specific
			Mercury	Avoidance/monitoring/PPE	Contractor Specific
			Other chemicals	Avoidance/monitoring/PPE	Contractor Specific
			Mold	Avoidance/monitoring/PPE	
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure EDIT.
8	Packaging of regulated waste as identified during the implementation of the Waste Management and Sampling Plan found within Section 1 of the Deconstruction Plan at generation points, movement of containers to decontamination unit and movement of decontaminated containers to waste loading area.	Level C***	Chemical COPC	Hazard Communication PPE	Contractor Specific
			Working from Elevations	Fall Protection	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			High pressure water	Pressurized systems	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Asbestos	Avoidance/monitoring/PPE	Contractor Specific
			Lead	Avoidance/monitoring/PPE	Contractor Specific
			PCBs	Avoidance/monitoring/PPE	Contractor Specific
			Mercury	Avoidance/monitoring/PPE	Contractor Specific
			Other chemicals	Avoidance/monitoring/PPE	Contractor Specific
			Mold	Avoidance/monitoring/PPE	
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure

NYC-WTC_000134282

NYC 9/11 Public Portal Document

Task 4: Demolition Phase Deconstruction activities including the systematic floor-by-floor deconstruction and removal of the remaining "clean" building components including exterior brick wall, and structural wook components.

Equipment required: Heavy equipment, HEPA vacuums, hand/power tools, ladders, scaffolding, lifting equipment, PPE

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
1	Mobilization (Transporting employees, materials and equipment to site)	Level D	Vehicle use	Vehicle and driving safety	Contractor Specific
2	Unloading equipment on the ground level	Level D	Lifting	Proper lifting techniques	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
3	Constructing abatement areas for rooftop transite and caulking and aluminum column covers and fascia	Level C***			
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Lifting	Proper lifting techniques	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Work from elevation	Fall protection	Contractor Specific
			Use of scaffolds	Scaffold safety	Contractor Specific
			Hand and power tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
4	Removal of building materials contaminated with ACBM.	Level C***	Working from Elevations	Fall Protection	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			High pressure water	Pressurized systems	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Asbestos	Avoidance/monitoring/PPE	Contractor Specific
			Lead	Avoidance/monitoring/PPE	Contractor Specific
			Other chemicals	Avoidance/monitoring/PPE	Contractor Specific
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure
5	Packaging of asbestos waste at generation points, movement of containers to decontamination unit and movement of decontaminated containers to waste loading area.	Level C***	Working from Elevations	Fall Protection	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			High pressure water	Pressurized systems	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Asbestos	Avoidance/monitoring/PPE	Contractor Specific
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure
6	Deconstruction of Concrete slabs	Level D	Demolition	Follow demolition plan	Safety Regulations
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Construction Equip	Demolition Safety	Contractor Specific
			Silica	Avoidance/monitoring/PPE	Contractor Specific
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure

NYC-WTC_000134283

NYC 9/11 Public Portal Document

Task 5: Site Work (Fencing, Back filling, Paving, and Drainage)

Equipment required: Trackloaders, Skidsteer Loaders, Small Tilt Sladers, Vibratory Rollers, Roller Compactor Truck

Paving: Asphalt Paving Equipment, Smooth Barrel Roller, Forklift, Crane, Area lift

Subtask #	Activities	PPE Requirements	Hazards	Preventative Mechanism	Procedure
1	Installation of Site fences	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below
2	Back filling	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below
3	Paving	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below
4	Drainage	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below

General Precautions- Site specific precautions to be determined as the detailed scope and schedule are developed.
Care must be taken to reduce the risk of worker injury and property damage during backfilling or paving operations.

1. No backfill shall commence until all workers are clear of the working areas.
2. The operators of any machines or vehicles being used in backfilling operations shall keep other employees in sight at all times.
3. The operators of any truck employed in backfilling operations shall ensure that all workers are in the clear before approaching the ditch or dumping the load.
4. No equipment shall back closer than 1 meter to the edge of any excavation and this set-back shall be increased commensurately with the depth of the excavation unless trenching slads or other retention devices are employed.
5. No equipment shall dump material closer than 1 meter to the edge of an excavation.

NYC-WTC_000134284

NYC 9/11 Public Portal Document

If site conditions change during the course of the deconstruction project, the Environmental Consultant will evaluate the new conditions and discuss appropriate amendments to the HASP with the Contractor. The proposed amendments shall be reviewed and approved by the Environmental Consultant's CIH and the Contractor Project Manager.

2.2.3 Physical Hazards

While the buildings at 133-135 Greenwich/21-23 Thames Street suffered no significant damage from the WTC Collapse, numerous physically hazardous conditions exist related to the deteriorated, run-down condition of much of the space in these buildings. These hazards include damaged electrical sources and components, falling hazards due to openings in the floors, or the possibility of materials falling from overhead. The primary physical hazards that may be encountered during this project are related to the Abatement Phase activities and include: heavy equipment operation; excessive noise; excessive heat or cold; inclement weather; manual lifting/handling of heavy objects; poor housekeeping; rough terrain; compromised structural integrity; traffic; cranes, hoists and other lifting equipment;, aerial lifts and manlifts; working at elevation; use of scaffolding; hazardous materials handling; potential utility and electrical sources; use of hand and power tools; slips and falls; etc.

Due to the existence of these hazards, the Contractor shall ensure that all site employees receive hazard awareness training. Additionally, the Contractor shall insure that Subcontractors perform the following operations under the direct on-site supervision of OSHA Competent Persons (provided by the Subcontractors for each task as necessary):

- General Construction (29 CFR 1926.20)
- Unsanitary Conditions (29 CFR 1926.27)
- Rigging (29 CFR 1926.251)
- Scaffolding (29 CFR 1926.450)
- Ladders (29 CFR 1926.1053)
- Personal Fall Arrest Systems (29 CFR 1926.500 and .502)
- Ear Protection (29 CFR 1926.101)
- Cranes and Derricks (29 CFR 1926.550)
- Materials Hoists, Personnel Hoists and Elevators (29 CFR 1926.552)
- Demolition (29 CFR 1926.850)
- Welding/Cutting on surfaces covered by protective coatings (29 CFR 1926.354)
- Excavation (29 CFR 1926.650)
- Lead (29CFR 1926.62)
- Asbestos (29 CFR 1926.1101)
- Cadmium 1926.1127
- Powered Platforms for Building Maintenance, 29 CFR 1910.66
- Hazardous Waste Operations and Emergency Response, 29 CFR 1926.65

NYC-WTC_000134285

NYC 9/11 Public Portal Document

2.2.4 Chemical Hazards

A chemical hazard that may be encountered during this project is asbestos. Based upon the most recent pre-demolition asbestos survey conducted by Airtek environmental Corp., approximately 50 linear feet of friable, and 400 square feet of non-friable asbestos-containing material has been identified. In addition, WTC dust with assumed varying concentrations of COPCs, has been identified during visual inspection of the site. Therefore, the Contractor shall ensure that all site employees receive the required training concerning asbestos as well as all applicable Hazard Communication training.

In addition, personnel who have the potential to disturb ACBM shall be trained concerning the procedures to be used and requirements for notifications in accordance with federal, state and local regulations. Personnel who handle ACBM on this job shall have the required documented training and certificates. Each employee involved in abatement activities must have completed City of New York asbestos training, shall be a certified asbestos worker and/or supervisor by the City of New York, and shall be certified asbestos handler and/or supervisor by the New York State Department of Labor. Additionally, personnel who will conduct cleaning and abatement activities must have additionally received the required 40-hour training as outlined by 29 CFR 1910.120(a) (i) (HAZWOPER requirement) and appropriate annual refresher training as required. This HAZWOPER training requirement may be removed, should sampling indicate training requirement downgrade is appropriate. Training, medical and license documentation for each Subcontractor employee shall be verified by the CSO prior to start of work by the Subcontractor.

2.2.4.1 Additional Identified Chemicals

Other chemicals identified as potential contaminants that may be encountered during the initial site cleaning activities are PAHs, dioxins, antimony, cadmium, nickel, barium, chromium, lead, zinc, manganese, copper, beryllium, PCBs, mercury, copper, zinc, cristobalite and quartz.

Environmental sampling in the neighboring buildings has verified the presence of these chemical contaminants in WTC dust in concentrations exceeding USEPA's Residential Cleanup Criteria.

Additional chemical hazards generated from deconstruction activities would be lead, cadmium, and chromium from coated surfaces. Subcontractors shall perform personnel monitoring for all COPCs as required by OSHA. In addition, Subcontractors must provide applicable OSHA training for the identified hazards. Documentation of this training must be provided by the Subcontractor.

Precautions to be taken during the removal of miscellaneous hazardous materials (bulbs, ballasts, batteries, mercury-containing thermostats, etc) are found in Table 2-1, Task 3. Respiratory protection, as identified within Table 2-1, represents the minimum level of protection for all identified tasks.

There may also be hazardous chemicals brought on-site and used in the deconstruction. The requirements of the OSHA Hazard Communications Standard (29 CFR 1910.1200) shall apply.

(including .... , not allowed for asbestos project.

NYC-WTC_000134286

NYC 9/11 Public Portal Document

Section 2.8 provides information concerning the management of hazardous chemicals on-site and the site Hazard Communication Program.

2.2.5 Biological Hazards

Biological concerns in the work area are primarily, insects, rodents, and mold/fungi.

2.2.5.1 Insects

The presence of insects shall be addressed by personnel as the insects are encountered. When a stinging or poisonous insect, such as a bee or spider, is identified, personnel should exercise caution to avoid being bitten or stung for example by using tools to move material. In the event that a person is stung or bitten, the incident shall be reported to the Site Manager for the Subcontractor who shall report the incident to the CSO. The Site Manager for the Subcontractor shall initiate actions to manage and address the bite or sting. Personnel who are allergic to insect bites and stings should identify their allergy to their employer.

2.2.5.2 Rodents

In the event that rodents or animal pests are identified or observed on-site, the Subcontractor Manager should report the incident to the Contractor CSO. The Contractor shall be responsible for evaluating the condition and implementing steps to eliminate rodents on the site.

2.2.5.3 Mold/Fungi

The initial building walk-though by Airtek environmental identified mold contaminated building materials/components within the Building. The identification of additional mold/fungi on-site will be made based on visual inspections of building materials. When mold/fungi are identified, the removal of impacted materials shall be addressed concurrently with Asbestos Abatement Activities. Removal and handling measures shall be consistent with the NYC Department of Health and Mental Hygiene "Guidelines on Assessment and Remediation of Fungi in Indoor Environments."

2.3 ENGINEERING CONTROLS

Engineering controls will be used as primary protective mechanisms to protect the safety and health of all employees whenever technically feasible, and prior to the implementation of Administrative Controls and/or personal protective equipment. Each Subcontractor shall be responsible for the provision and implementation of the following:

- Construction/demolition dust suppression materials and equipment to include:
    - HEPA-filtered air filtration devices to reduce area dust levels.
    - Vacuum cleaners equipped with HEPA filters.

NYC-WTC_000134287

NYC 9/11 Public Portal Document

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- Fume eductors attached to HEPA filters for all hand-powered tools.

- Removal of all lead-based painted materials (if necessary), and adequate exhaust ventilation provided.

- Barricades, railings or other devices to prevent employee exposure to fall hazards or moving equipment per 29 CFR 1926.

- Other task-specific engineering controls as recommended by OSHA guidelines or as recommended by the Contractor or the CIH.

2.4 ADMINISTRATIVE CONTROLS AND WORK PRACTICES

Each Subcontractor shall utilize administrative controls and work practices as a secondary means of ensuring worker health and safety when engineering controls do not provide sufficient protection or are technically infeasible. Each Subcontractor shall be responsible for the provision and/or implementation of the following:

Ensuring all employees are enrolled in a medical monitoring program as required by OSHA, including medical monitoring for blood lead levels as outlined in Section 2.13 of this HASP.

Ensuring all employees have current fit-test and training certifications.

Implementing work practices that avoid generating dust whenever possible.

Requiring that all employees implement decontamination procedures, including washing hands, face, hair and neck upon leaving the work area and before eating, drinking or smoking.

Removing lead based paint or coatings before cutting, grinding or other activities that would be expected to disturb the lead-based materials, or complying with the provisions of 29 CFR 1926.62.

Use of the Buddy System will be required for all employees working within the Exclusion Zone, as defined in Section 2.8.1 below, or while performing non-standard tasks as designated by the Subcontractor's Safety Officer.

2.5 PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE to be provided ahead of admin controls

Personal protective equipment will be used to provide adequate personnel protection only after feasible engineering and administrative control options have been exhausted. All personnel engaged in the project work activities will use the appropriate level of protection as required by the activity to be performed and are presented in the "Task Hazard Analysis" presented in Table 2-1.

PPE minimum requirements are not in Table 2-1

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NYC-WTC_000134288

NYC 9/11 Public Portal Document

and minimum requirements set forth in City, State and Federal Rules.

All PPE requirements for site activities are based upon available historical site characterization data ~~and~~ knowledge of the anticipated hazards. Changes in levels of PPE and changes in the PPE requirements for specific areas shall be made based upon the results of monitoring, visual observations and the nature of the site operations, including the presence of or potential for previously unidentified chemicals or conditions.

In accordance with OSHA 29 CFR 1910.132-138 and 1926.28 (Personal Protective Equipment), all PPE shall be provided, used, and maintained in a sanitary and reliable condition. All PPE shall be of construction, design, and material to protect employees against known or anticipated hazards. PPE shall be selected that properly and appropriately fits the employee. PPE shall be worn in compliance with PPE requirements of NYC DEP and OSHA.

2.5.1 Basic PPE Requirements

Each employee will wear a hard hat and safety glasses or other eye protection at all times while onsite, except for designated "safe" areas. Eye protection includes safety glasses, safety goggles, welding goggles, welding hoods, or full-face respirators. Prescription or non-prescription eyeglasses and sunglasses are not approved for eye protection. All acceptable eye protection must include side shields and must be ANSI-approved.

Unless in designated safe locations, all personnel shall have with them and/or wear the following PPE when entering the site:

Work clothes without loose sleeves and cuffs

American National Standards Institute (ANSI) - approved safety boots

ANSI - approved safety glasses

ANSI - approved hard hat with bill facing forward

Work gloves (either leather or cotton)

Hearing protection (as necessary)

The above listed PPE ensemble, defined as Level D, shall be worn during all outdoor site activities and inside of the building after clearance testing has been completed.

2.5.2 Level C PPE

Level C PPE shall be worn when working inside of the building (with the exception of previously cleaned areas such portions of the basement occupied by field offices) during all Abatement Phase activities, except for concrete jack hammering in enclosures . Level C PPE consists of:

Full-face powered air-purifying respirator (PAPR) with HEPA filter approved by the National Institute for Occupational Safety and Health (NIOSH)/Mine Safety and Health Administration

NYC-WTC_000134289

NYC 9/11 Public Portal Document

(MSHA)1. Half-face air-purifying respirators (APR) may be used during work preparation activities.

Gloves - nitrile inner; chemical resistant outer (nitrile or neoprene)

ANSI-approved safety boots

ANSI–approved Eye protection – safety glasses or goggles

ANSI-approved Hard hat with bill facing forward

Tyvek coveralls with head cover (Two layers Tyvek or equivalent)

Water-resistant overboots which are treaded to provide slip protection

Hearing protection (as necessary)

2.5.3 Level B PPE

Level B PPE may be required during jack hammering concrete unless engineering controls are instituted incorporating local exhaust ventilation at the point of dust generation until personal air monitoring confirms that the level of silica is below the OSHA action level. Level B PPE consists of:

Self-Contained Breathing Apparatus (SCBA) or combination airline/SCBA approved by the National Institute for Occupational Safety and Health (NIOSH)/Mine Safety and Health Administration (MSHA).

Gloves - nitrile inner; chemical resistant outer (nitrile or neoprene)

ANSI-approved safety boots

ANSI–approved Eye protection – safety glasses or goggles

ANSI-approved Hard hat with bill facing forward

Tyvek coveralls with head cover (Two layers Tyvek or equivalent)

Water-resistant overboots which are treaded to provide slip protection

NOTE: If air sampling data proves that the level of asbestos and COPCs are consistently below the action level, respiratory protection may be downgraded to an appropriate level of protection.

Hearing protection (as necessary)

2.5.4 Level A PPE

Use of this type of PPE is not anticipated at this site. Should work conditions and personnel sampling exceed action levels for a PPE upgrade to Level A, operations shall cease in that area

NYC-WTC_000134290

NYC 9/11 Public Portal Document

until site conditions can be re-evaluated by the Contractor and the Environmental Consultant's CIH.

2.6 SAFETY EQUIPMENT

The following emergency equipment will be located in the CRZ: fire extinguishers, spill control equipment, , and decontamination equipment.

The requirements for PPE on this job may be refined and changed to address the conditions identified when tasks are performed. The Subcontractors will work with the Contractor to ensure the proper PPE is maintained and available on-site at all times, and that personnel are trained to use the PPE and understand the procedures and practices for the safe and effective use of PPE. The Subcontractors will provide the required PPE for their employees.

The PPE requirements presented in this HASP are the minimally acceptable for the specified activity. Subcontractors can make individual decisions to upgrade the equipment requirements for each PPE level to ensure the hazards presented by an activity are controlled and exposure is minimized. Engineering and administrative controls will be identified and implemented for each activity prior to use of PPE.

2.6.1 Respiratory Protection Program

Respiratory protection is required whenever work is performed inside the building to protect the workers from exposures to contaminants, primarily asbestos, which may be present. Half-face negative pressure air purify respiration particulate filters that are HEPA or P100 shall be required during work preparation activities (i.e. installation of isolation barriers) and PAPR will be used during other Abatement Phase activities, unless Level B is required. Environmental Consultant's CIH or qualified subcontractor IH personnel will evaluate the need for additional protection such as adding organic vapor cartridges based on their respiratory protection programs and chemicals they may be using. The following practices will be conveyed to all employees and enforced by the Contractor and the CSO respect to respiratory equipment for this project:

1. Subcontractors whose personnel wear respiratory protection shall have a written respiratory protection program that meets the requirements of the OSHA Standard (29 CFR 1910.134) and has been developed by a Competent Person as defined by OSHA.

2. Personnel who may need to wear respiratory protection shall be fit-testing, medically qualified and trained, as required by the Standard, to use respiratory protection. The Subcontractor shall identify personnel who may use respiratory protection and documentation of fit-testing, medical qualification and training shall be provided for each person who may need to wear respiratory protection on the job.

3. The Subcontractor shall review with the Contractor CSO the procedures for the handling, storage and maintenance of respiratory protective equipment to be used on-site, including the process for reporting and repairing or replacing defective equipment and the locations where respiratory equipment will be stored.

NYC-WTC_000134291

NYC 9/11 Public Portal Document

4. Subcontractors will provide employees with adequate respiratory protection as required by each task.

5. A respirator of lesser protection factor than is required for the task/activity may not be used.

6. Each employee will change his/her respirator filter at the end of each work shift. The Subcontractor will provide an adequate supply of approved filters in accordance with the manufacturers specifications for daily replacement for each employee's respirator.

7. Each Subcontractor will ensure the adequacy of respiratory protection for his employees based upon the verified results of personal air sampling.

8. If at any time air sampling data indicates airborne exposures exceeding one-half the OSHA Permissible Exposure Limit, all affected employees' respiratory protection will be upgraded.

9. Personal air sampling results shall be posted on the Decontamination unit during the abatement phase, and the site management station during the deconstruction phase.

2.6.1.1 Respirator Testing

Each individual who must wear a respirator will be required to be clean-shaven where the sealing areas of the respirator face piece contacts the face. Each respirator user will be respirator fit-tested in accordance with 29 CFR 1910.134 at least annually. Upon donning the respiratory device or before entering any restricted work area, each respirator wearer will be required to perform a manual negative and positive-pressure test. Subcontractor employees who fail the negative/positive pressure test because they are not clean shaven will be required to leave site for the day or to shave on-site immediately preceding entry into the work area.

2.6.1.2 Respirator Inspection, Sanitization, and Maintenance

All respirators will be cleaned, sanitized, inspected, assembled, and maintained ready for use on a daily basis. Each respirator will be stored in a clean and sanitary container. Prior to use, the wearer will inspect the respirator, including the valves, valve covers, nosepiece, straps, eyepiece (for full-face respirators), face piece and its snaps, cylinders, and canisters to insure that the respirator can be worn. The Subcontractor will provide initial training concerning the use of respirator equipment, but each employee will be responsible for cleaning, inspecting, maintaining, sanitizing, and storage of his/her respirator equipment.

If a respirator becomes chemically contaminated or malfunctions, the respirator will be replaced by the employer with a clean and sanitized respirator, and the contaminated/defective respirator shall be decontaminated and repaired before reuse, or tagged "out of service" and disposed of. The respirator wearer shall inspect the replacement respirator for defective parts and leaks and will be fit tested if the replacement respirator is of a different make, model or size than the original.

NYC-WTC_000134292

NYC 9/11 Public Portal Document

2.6.2 Medical Response Equipment

The following medical response equipment shall be available on-site for the duration of the site activities. The locations of these equipment stations shall be determined at the site and incorporated into this HASP upon initiation of each task. The Contractor CSO shall maintain responsibility for the incorporation of this information into this HASP.

- Eyewash Stations: The location of emergency eyewash stations shall be determined. Each station shall provide a continuous spray of a rate of 0.4 gallons per minute for at least 15 minutes. This station shall be inspected daily to ensure proper operation.

- First Aid Kits: The locations of fixed and/or portable kits shall be determined. As a general guideline, each Subcontractor shall provide, at minimum, one first aid kit for every 20 employees and shall station it within the work area (for Level D operations) or directly outside the decontamination area (contaminant reduction zone) (for Level C or Level B operations).

The locations of eyewashes and first aid kits and the procedures for using and reporting an incident shall be presented during the initial on-site training. The Contractor CSO shall make all personnel aware of the locations and use of this equipment prior to engaging in site work activities.

2.7 PERSONAL AIR MONITORING

Each Subcontractor and trade employer shall perform personnel air sampling for the following contaminants during Abatement Phase of the project: particulates as TSP, metals as TSP, asbestos, PAHs, D/Fs, PCBs, mercury, lead and silica. Additionally, daily personnel sampling for lead, cadmium, chromium and mercury shall be performed during all cutting operations as required by 29 CFR 1926.62(d)(2)(iv) and the Cadmium in construction standard [29 CFR 1926.112]. The results of personnel monitoring will be reviewed on a daily basis by the Subcontractor Safety Officer to determine if current levels of respiratory protection are adequate. The subcontractor safety officer shall provide written documentation of this review to CSO and the subcontractor must immediately report any results that trigger PPE upgrades. The following table lists the OSHA PEL, site specific Action Level, and trigger levels:

NYC-WTC_000134293

NYC 9/11 Public Portal Document

Table 2-2

Contaminants	OSHA PEL	Action Level (Half value of OSHA PEL)	10 X OSHA PEL (Protection factor for Half-face APR)	100 X OSHA PEL (Protection Factor for Full-face PAPR)
Asbestos	0.1 f/cc	0.05 f/cc	1 f/cc	10 f/cc
Antimony	0.5 mg/m^3	0.25 mg/m^3	5 mg/m^3	50 mg/m^3
Barium	0.5 mg/m^3	0.25 mg/m^3	5 mg/m^3	50 mg/m^3
Beryllium	0.002 mg/m^3	0.001 mg/m^3	0.02 mg/m^3	0.2 mg/m^3
Cadmium	0.005 mg/m^3	0.0025 mg/m^3	0.05 mg/m^3	0.5 mg/m^3
Chromium (III)	0.5 mg/m^3	0.25 mg/m^3	5 mg/m^3	50 mg/m^3
Copper	1 mg/m^3	0.5 mg/m^3	10 mg/m^3	100 mg/m^3
Lead	0.05 mg/m^3	0.025 mg/m^3	0.5 mg/m^3	5 mg/m^3
Manganese	5 mg/m^3	2.5 mg/m^3	50 mg/m^3	500 mg/m^3
Mercury	0.1 mg/m^3	0.05 mg/m^3	1 mg/m^3	10 mg/m^3
Nickel	1 mg/m^3	0.5 mg/m^3	10 mg/m^3	100 mg/m^3
Zinc	5 mg/m^3	2.5 mg/m^3	50 mg/m^3	500 mg/m^3

2.8 SITE CONTROL

Site control measures shall be implemented to protect the public and personnel working on-site. The aspects of site control shall address general access to the site; and access to the building and site during the deconstruction phase.

Fences, guardrails and access devices, including ladders, stairways, and walking surfaces shall be provided and maintained throughout the project activities in accordance with 29 CFR 1926. In addition, barricades, warning signs, temporary lighting and other safety measures shall be provided, as required, to protect site personnel.

All visitors to the site shall report first to the Contractor field office. Visitor access shall be limited to the Support Zone and Level D operation areas only, and shall be allowed only with the prior consent of the Contractor NYCSSM and the Contractor Site Manager.

No visitor (other than regulatory inspectors) shall enter a work area unescorted by a Subcontractor or Contractor representative. The presence of any regulatory agency on-site shall be reported immediately to the Contractor Site Manager.

2.8.1 Work Zones

Entry into the work zones begins once a person comes on-site. This approach reflects the dynamic nature of the operations and the need for everyone to be aware of the conditions while on-site. Using the concept of three zones for the site, the following areas are identified:

• Support Zone – This area starts at the project/property fence line and extends to the entry to where personnel enter the building to complete the work tasks. This area includes the ground outside of the building and any office spaces. In this area all personnel shall wear Level D PPE. Within this area exclusion zones may be established depending on the operations, for example:

NYC-WTC_000134294

NYC 9/11 Public Portal Document

where material handling is performed, where hoisting equipment is located or where equipment is staged.

• Decontamination Unit/Contamination Reduction Zone (CRZ) – This area shall be located subject to approval of the variance. The CRZ shall exist until the completion of Abatement Phase activities. Personnel shall be aware of and follow all site control procedures with respect to entering and exiting the CRZ, to ensure that they are not exposed to contaminants and to minimize the potential for contamination of personnel and the spread of contamination outside the Exclusion Zone (EZ). These measures include having personnel follow the proper procedures for donning and removal of PPE and washing in the CRZ. The measures also address the decontamination procedures for use when moving equipment between zones. The CRZ shall consist of an area to drop off equipment, plastic bags to dispose of protective clothing, adequate soap and water for personnel and equipment decontamination and a means of capturing wash water generated during decontamination. The CRZ shall also have a first-aid kit, fire blanket and fire extinguisher (20-lb ABC type).

• Exclusion Zone (EZ) – This area extends from the side of the CRZ facing the building and includes all areas on each floor of the building. This definition of the EZ shall remain effective until Abatement Phase activity on each floor is completed. No employee shall enter the Exclusion Zone without the required training and PPE. No employee shall eat, drink, chew gum, apply cosmetics, smoke or use other tobacco products while in the Exclusion Zone. The employee must first exit the Exclusion Zone and follow decontamination procedures (Section 2.8.2.1) in the CRZ before engaging in any of the above actions. In the event that an employee in the EZ requires a replacement or his/her protective suit or respirator filters, the employee shall exit the EZ and utilize proper decontamination procedures in the CRZ, replace or repair the defective PPE, then reenter the EZ.

2.8.2 Personnel and Equipment Decontamination

When exiting the EZ, personnel shall be aware of and follow the procedures used to decontaminate personnel, equipment, and sampling containers. Subcontractors shall ensure that their employees follow proper decontamination and waste disposal procedures. Disposal of PPE and other items shall be performed in accordance with Section 3 of this HASP, with material placed in appropriately sized and labeled containers. Specific decontamination procedures are presented in the following subsections. All decontamination procedures shall be in accordance with the Entry/Exit Procedures of NYC Title 15, Chapter 1.

2.8.2.1 Personnel Decontamination Procedure

Personnel entering containment are required to follow proper decontamination procedures. All employees who leave the Exclusion Zone shall follow the decontamination process as outlined below.

All employees shall remove all gross contamination and debris from disposal protective clothing and equipment by vacuuming prior to leaving the EZ. All employees must be HEPA vacuumed before entering the CRZ. Upon entering the CRZ, each employee shall remove the first layer of protective clothing and place it in the appropriate container. If the employee performs duties and

NYC-WTC_000134295

NYC 9/11 Public Portal Document

becomes "grossly contaminated", the decontamination procedure will include an Alconox (soapy) wash and a tap water rinse of the outer suit, gloves and overboots prior to removal of the outer layer.

After employees remove the first layer of tyvek and gloves, they shall then move into a second decon area where the second tyvek and gloves shall be removed and placed in the appropriate waste container. After this decontamination, personnel shall proceed to a washing facility to take full showers. The employee shall dispose of all protective clothing upon exiting the decontamination unit; all half-face APR respirator cartridges, if used, shall be changed out, as needed, but on a daily basis at a minimum. Full-face PAPR cartridges may be utilized more than one day if functioning as designed and sealed and decontaminated after each use.

2.8.2.2 Equipment Decontamination Procedure

Since equipment decontamination is difficult, unnecessary equipment shall not be brought into the controlled areas. All materials used in the regulated area shall be properly HEPA vacuumed and wet-wiped before leaving the first decontamination zone. All equipment that becomes "grossly contaminated", will require an Alconox wash and tap rinse.

2.8.3 Safety Meetings

A safety meeting shall be held each day with the Contractor and each Subcontractor prior to initiating the scheduled activities and at the beginning of each day. The topics and content for the Safety Meeting shall be prepared in advance by the subcontractors and submitted to the Contractor for approval. The safety meeting shall review elements in the site HASP and the procedures for working on-site, and address the impacts of changes to the site conditions.

Topics to be addressed include:

- Use and maintenance of PPE
- Evacuation routes;
- Warning signals;
- Maintaining line-of-sight and communications;
- Rehearsal of scheduled activities;
- Hospital routes;
- Locations of safety equipment;
- Previous violations of the safety plan and procedures or changes to the program to correct the violation;
- Anticipated hazards for the day's work activities;
- Any changes to the requirements for levels of PPE;
- The locations of work zones; and
- General site conditions.

All safety meetings shall be documented in the site H&S logbook. Meeting participants shall sign an attendance sheet.

NYC-WTC_000134296

NYC 9/11 Public Portal Document

2.9 TRAINING PLAN

All personnel directly involved in the project site activities shall be trained for the tasks they will perform, as required by applicable federal/state/local regulations. Refresher training will be performed at least yearly. In addition, all site personnel shall participate in site-specific training and participation of personnel in training shall be documented, with proof of training maintained on-site. The topics of training required are dependent on the SOW. This training shall be administrated by the Contractor, the Subcontractor, or certified training facilities.

2.9.1 Health and Safety Awareness Training

Each Subcontractor shall be responsible for presenting and discussing the elements of this HASP with their personnel and subcontractors, and ensuring that personnel follow the elements of this HASP when working on-site. Prior to the start of work activities, or whenever a new hazard is introduced into the work area, employees shall be provided with the information indicated below. The Contractor or HASP CIH shall be available to address any questions or assist in the presentation of the HASP information to project employees. Information to be addressed during this training shall include, but not be limited to:

- Hazardous chemicals present at the work site and their associated health risks.
- Potential physical hazards associated with the work activities, and proper safety practices.
- Proper use of all tools and equipment to complete the scope of work activities.
- Requirements of the site Hazard Communication Program, including the labeling of containers.
- Site alarm system, emergency response procedures, and location of emergency lay down Area.
- Proper PPE to be used during work activities.
- Location of the MSDS files.
- How to reduce or prevent exposure to hazardous chemicals through the use of procedures, work practices, and personal protective equipment.

2.9.2 Asbestos Training

ACBM was determined to be in several building components per the Airtek Building Asbestos Survey. Building Personnel entering containment shall be trained to identify ACBM and the hazards associated with asbestos in accordance with the OSHA Asbestos Standards (29 CFR 1910.1001 and 29 CFR 1926.1101) and state/local certification requirements. This training provides personnel with a better understanding of asbestos and the steps to be taken to protect themselves and the public. In all areas, required NYSDOL and NYCDEP procedures shall be followed.

2.9.3 HAZWOPER Training

Personnel entering the exclusion or contamination zones for the purpose of performing cleanup abatement activities must have received the required 40 hour training as outlined by 29 CFR

NYC-WTC_000134297

NYC 9/11 Public Portal Document

1910.120(a) (i) and appropriate annual refresher training as required. This HAZWOPER training requirement may be removed, should sampling indicate training requirement downgrade is appropriate.

2.10 PERSONAL PROTECTIVE EQUIPMENT TRAINING

Each Subcontractor shall provide training concerning the use of PPE to their personnel, as specified by this plan, to address the general PPE requirements and any specific requirements for PPE they may use, such as fall protection. The Contractor SSM or CSOCSO can assist with this training, and any concerns regarding the use of appropriate PPE shall be brought to the attention of the Contractor SSM. Further discussion of the types of PPE is presented in Subsection 2.5 of this HASP

2.10.1 Emergency Response Training

Emergency response training, in accordance with the Emergency Action Plan found within Section 2 of this HASP, shall be provided to all on-site-personnel as part of the site-specific safety and health awareness training. The emergency response training shall be conducted by each Subcontractor's Safety Officer for her respective employees. At a minimum, the topics of this training shall include the following:

- Location of all site emergency equipment
- Response procedures for fires
- Response procedures for injuries and accidents
- On-site/off-site response resources
- Emergency site operations shut down procedures
- On-site "Chain of Command"
- Designated on-site emergency meeting location
- Recognition of evacuation signals and alarms

2.10.2 Visitor Training

Authorized Visitor: The client, his representative and any representative of a regulatory or other agency having jurisdiction over the project.

During the Abatement Phase all visitors entering the EZ must provide proof of an up-to-date fit-testing and medical clearance, and completion of asbestos certifications required for the employee's scope of work. In addition each visitor will receive site-specific training by the Contractor SSM or CSOCSO that includes:

- Location and description of potential hazards and risks
- Required PPE
- Areas of the site that may be closed to visitors
- The site evacuation plan and emergency procedures
- Other Topics as deemed appropriate by the Contractor SSM

NYC-WTC_000134298

NYC 9/11 Public Portal Document

2.10.3

Because of lead and cadmium being identified as COPCs and the potential for lead fumes or dust to be produced in deconstruction from building materials, subcontractors will provide proof of training required in OSHA Specific Standards 29 CFR 1926.65 (Lead in Construction) and 1926.1127 (Cadmium).

2.11 HAZARD COMMUNICATION

The Contractor and Subcontractors shall notify the Contractor SSM of any hazardous products prior to bringing the chemical on site and shall provide a MSDS for each product. These MSDSs shall be maintained by the Contractor SSM and shall be kept in a site master file. In addition, each Subcontractor shall maintain a copy of the MSDS for each product that they bring on-site.

The SSM will have the responsibility to review MSDSs for hazardous materials proposed for the site in order to investigate potential alternate products that are non-hazardous.

The Subcontractor shall review with the Contractor SSM the procedures for handling, using and storing the chemicals brought on-site, and shall review with their personnel the proper procedures for handling, using and storing the chemicals before the product is used on-site. This includes but is not limited to all commercial products brought on-site by Subcontractors, including commercial cleansers, degreasers, lubricants and paints.

2.11.1 Container Labels

All containers of hazardous materials shall be labeled in accordance with appropriate standards. The labels on containers provided by the manufacturer, importer, or distributor shall be used.

Labels affixed to containers of hazardous materials shall:

- Identify the material using a name with which workers are familiar,
- Identify the hazards associated with the material, including toxicity information
- Identify the material using a name with which workers are familiar.
- Identify the hazards associated with the material, including toxicity information that indicates symptoms and target organs.
- Identify the name, address, and telephone number of the manufacturer, importer or distributor where more information may be obtained.

Labels shall not conflict with Hazardous Materials Transportation Act (HMTA) labeling requirements and shall meet the requirements of OSHA substance-specific health standards, where required.

Labeling shall be required of all portable/temporary hazardous materials containers at all times. The contractor/subcontractor shall prepare a container label on portable containers filled from a correctly labeled container and when the container label is defaced or illegible. The prepared

NYC-WTC_000134299

NYC 9/11 Public Portal Document

temporary label shall indicate pertinent chemical identification and health information as required by OSHA.

All hazardous materials containers shall be labeled for content, hazard, and storage prohibitions, such as those relating to temperature range and chemical incompatibility with other materials and/or wastes. The labels shall be in compliance with requirements of New York State law. Containers containing hazardous waste shall also be labeled or marked clearly with the words, "Hazardous Waste".

2.11.2 Material Safety Data Sheets (MSDSs)

All MSDSs shall be submitted by the Subcontractors and shall be maintained by the Contractor SSM within a site master file. In addition, each Subcontractor shall maintain a copy of the MSDS for each product that they bring on-site. In addition, each Subcontractor shall also retain a log of MSDSs for chemicals used on this project and this log shall be kept on-site. The location of the MSDS folder shall be made known to all project employees.

Each Subcontractor shall review incoming MSDSs for new or significant health and safety information and shall ensure that any new information is communicated to affected employees, the Contractor SSM and other subcontractors. If an MSDS is not received at the time of initial shipment of materials, the material may not be used until the MSDS has been obtained from the manufacturer.

Employees shall be instructed to notify their Site Manager if an MSDS is not available. When a revised MSDS is received, the Site Manager shall immediately replace the old MSDS. Subcontractors shall insure that the MSDSs on file for their chemicals are current (updated within the last two years)

2.12 ACCIDENT PREVENTION & INVESTIGATION

A vital element of maintaining safe work practices is accident prevention. The following four actions are instrumental to accident prevention, and shall be communicated to all project personnel:

- Eliminate unsafe conditions. Efforts shall be initiated and implemented throughout the project to identify conditions that can contribute to an accident, and to remove exposure to these conditions. Each Subcontractor Safety Officer shall audit the work area prior to each shift to identify and correct any unsafe conditions.

- Reduce unsafe acts. Personnel shall make a conscious effort to work safely. A high degree of safety awareness shall be maintained so that safety factors are an integral part of each task. Daily safety briefings shall be designed to heighten general safety awareness and will be tailored to the individual audiences and tasks each day.

NYC-WTC_000134300

NYC 9/11 Public Portal Document

- Inspect frequently. Regular safety inspections of the work site, material, equipment, and operations by qualified persons (i.e., Contractor SSM) shall be performed to ensure early detection of unsafe conditions. Safety and health deficiencies shall be corrected as soon as possible, or site activities shall be suspended. All inspections shall be documented and the records retained by the Subcontractor for, at a minimum, the duration of the project. Copies of the inspection reports shall be provided to the Contractor SSM or Contractor Project Manager upon request,

- Educate personnel concerning the requirements of the HASP. The HASP and all site health and safety education shall be provided by each Subcontractor, the Contractor SSM and CSOCSO.

All minor accidents (i.e., small fires, injuries, and near misses) shall be investigated by the Subcontractor Site Manager or Safety Officer and communicated to the Contractor SSM immediately when reported to the Subcontractor. The Contractor should also be contacted as soon as possible. An accident investigation shall include reviewing the accident/incident report, questioning the injured employee(s) as well as other personnel witnessing the occurrence, identifying all contributing acts and conditions, determining underlying reasons for their existence or occurrence, and implementing corrective actions. A report documenting the investigation shall be written and forwarded by the Subcontractor to the Contractor SSM and the Contractor Project Manager. Recommendations for accident prevention shall also be made in the report and communicated to all site personnel during periodic safety briefings and training sessions.

2.13 MEDICAL SURVEILLANCE PLAN

All persons involved in Abatement Phase activities shall be enrolled in an HAZWOPER and/or asbestos medical monitoring program, as appropriate, prior to working on-site. This requirement ensures that personnel are protected from asbestos and other COPCs that have been identified. In the event that air sampling confirms the presence of asbestos levels above the OSHA PEL, then guidance concerning the requirements for annual medical examinations shall be provided by the Contractor SSM.

2.13.1 Respiratory Protection

All personnel having to wear a respirator must have a medical evaluation as required by 29 CFR 1910.134 to determine fitness to use respiratory protective equipment prior to initiation of work activities. Documentation of fit-testing, medical qualification and training shall be provided for each person who may need to wear respiratory protection on the job. Each Subcontractor shall maintain a written Respiratory Protection Program developed by a competent Person as required by 29 CFR 1926.103.

2.13.2 Hearing Conservation

All personnel exposed to noise levels above 85 dBA must have a baseline audiometric evaluation in accordance with 29 CFR 1926.52 and 101. Personnel shall receive awareness training

NYC-WTC_000134301

NYC 9/11 Public Portal Document

concerning the hazards of noise and the procedures to properly use and maintain hearing protection. If any subcontractor exposes his employees to noise levels above 85dba, the Subcontractor must establish a written Hearing Conservation Program developed by a competent person as required by 29 CFR 1926.101 and 29 CFR 1910.95

2.13.3 First Aid

On-site First Aid/CPR/AED support shall be provided by the Contractor SSM. Additionally, each Subcontractor shall have on-site at least one person who has current training in first aid, CPR, and AED use.

2.13.4 Medical Emergency

The first worker who notices that a medical emergency or personal injury has occurred shall immediately make a subjective decision as to whether the emergency is life threatening and/or otherwise serious.

2.13.5.1 Life-Threatening and/or Otherwise Serious Incident

If a life-threatening incident occurs, those persons recognizing the situation should do whatever actions in their capabilities to reduce the threat and then the Contractor SSM shall be contacted. The Contractor SSM shall immediately notify the Emergency Medical Services (EMS) and implement emergency action procedures to have someone meet and guide EMS to the incident location. The Contractor shall be notified of the incident as early as possible.

The Contractor SSM shall be kept apprised of the situation and the location of the victim(s).

As the Contractor SSM proceeds to the accident scene, communications channels shall be opened and kept on standby until the Contractor SSM has surveyed the scene and performed a primary survey of the victim.

The Contractor SSM shall provide emergency action guidance consistent with the injury and shall relay the appropriate information to the site person meeting the EMS. Depending on the nature of the injury and the location at which the injury occurred, the Contractor SSM shall determine whether the person can be moved or whether the EMS team will need to come into the work area to assist the victim. Should the victim be injured in the Exclusion Zone, all appropriate life-saving methods shall be exercised in that area before attempting decontamination of the victim. The extent of emergency decontamination performed shall depend on the severity of the injury or illness and the nature of the contamination. If the emergency is such that emergency decontamination cannot be performed safely, the victim shall be given necessary first-aid treatment and wrapped in a blanket prior to transportation by EMS. If heat stress is a factor in a victim's injury/illness, all protective clothing shall be removed from the victim immediately.

2.13.5.2 Non-Life-Threatening Incident

NYC-WTC_000134302

NYC 9/11 Public Portal Document

Should it be determined that no threat to life is present, a co-worker will assist the injured person and contact the Contractor SSM as soon as reasonably possible. Should the victim be injured in the Exclusion Zone, a rapid decontamination consisting of Tyvek, glove and respirator removal shall be performed in the Contamination Reduction Zone prior to initiation of medical assistance. For all non-life-threatening injuries, all medical assistance shall be provided in the Support Zone to reduce the spread of contamination to medical personnel or equipment.

2.13.6 Bloodborne Pathogens

When an emergency occurs that involves the potential for contact with bodily fluids, personnel shall use procedures and PPE that minimize the potential for exposure.

All personnel who provided direct support to an injured person shall participate in a post-incident exposure review during which their role in the event and the potential for contact with bodily fluids shall be evaluated. The information relating to exposure shall be documented for each individual. The procedures for the post-exposure consultation identified in the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030) shall be followed.

All personnel on-site shall receive awareness training concerning Bloodborne Pathogens (BBP) and the procedures to be followed to respond to emergencies that occur on-site. This awareness training shall be provided by each Subcontractor prior to the initiation of work activities and when new employees are introduced to the Site

2.14 Reporting Emergencies

All site personnel, upon discovering an emergency situation, shall immediately call 911. The SMM shall be notified immediately thereafter and will assume responsibility as the onsite representative to the First Responders. The SMM shall immediately notify OWNER.

2.15 Building Evacuation

Any explosion, regardless of size or type, any structural failure, fires and certain power failures will require a complete building evacuation.

2.16 Designated Assembly Area

In the event of an evacuation the designated assembly point for site personnel is:

- #1 – Edgar Street between Trinity Place and Greenwich Street

During the safety orientation, all personnel will be instructed to locate and assemble in a manner that will not impede the operations of any business or agency in the area.
No visitors or trade personnel shall leave the assembly point until directed by the SSO. Following an evacuation, nobody shall be allowed to re-enter the Building until cleared by appropriate First Responder, safety, agency or technical personnel investigating the impact of the

NYC-WTC_000134303

NYC 9/11 Public Portal Document

incident to the Building. The SSO will provide the "all clear" signal to the contractor site managers once it is safe to return to normal work operations.

2.16 Response to Specific Emergency Events

Below is a list of unplanned events that may occur during the deconstruction project. This list may not be all encompassing, but represents "events" related to similar projects. These events include:

- Fire or explosion
- Power failure
- Structural failure
- Worker injury or illness

2.16.1 Fire or Explosion

In the event of an explosion or a fire, the SSO shall immediately:

1. Call 911
2. Initiate building evacuation procedures as outlined in Section 2.15 of this HASP
3. Meet First responders at the pre-designated location (unless circumstances dictate otherwise, it is the security desk at the Building) for briefing on the scope and nature of the emergency
4. Notify OWNER

Should there be a work stoppage in a certain area due to a fire or an explosion, work will not resume until the SSO verifies that appropriate corrective actions have been taken.

2.16.2 Power Failure

In the event of a power failure, the SSO shall immediately:

1. Call 911, if warranted
2. Coordinate with the site manager and abatement contractor to initiate containment isolation activities (e.g. both the Personnel and Waste Load Out Decontamination units must be immediately sealed to prevent a fiber release).
3. All containment isolation barriers are to remain secure until the required negative pressure has been re-established.

2.16.3 Structural Failure

Deconstruction process will create weakened sections as supporting elements are removed, such as roof sheathing, wall sheathing. In the event of a unanticipated structural failure, the SSO shall immediately:

1. Call 911, if warranted

NYC-WTC_000134304

NYC 9/11 Public Portal Document

2. Coordinate with the site manager and abatement contractor to initiate containment isolation activities (e.g. both the Personnel and Waste Load Out Decontamination units must be immediately sealed to prevent a fiber release).
3. All containment isolation barriers are to remain secure until the required negative pressure has been re-established.

2.16.4 Worker injury or illness

Potential injuries that may result in a medical emergency include:

- Slips, trips, falls, lacerations
- Trauma injuries caused by being struck by heavy equipment, building components, waste containers, etc.
- Eye injuries
- Burns from electrical, fire or explosion
- Electrical contact or electrocution
- Heat stress/stroke
- Chemical exposures
- Cardiac emergencies
- Respiratory emergencies

The Contractor and its subcontractors will respond to minor injuries requiring first aid only; major injuries or requirements for search and rescue will be handled by First Responders.

If a worker is showing signs of distress or obvious injury or illness, the SSO shall be immediately notified and provided the following information:

1. Location of victim
2. Nature of Emergency
3. Whether the victim is conscious
4. Specific details regarding the injury or illness
5. Whether the victim is in need of decontamination

The SSO will suspend work within the immediate area until the emergency situation has been corrected. If possible the subcontractors' first aid attendant shall treat the injured employee as necessary until a decision is made to seek outside medical assistance or to remove the victim from the Building.

The SSO will be responsible for calling 911 and will inform the First Responders whether asbestos abatement activities are taking place within the Building, and whether or not the injured employee has been brought through the decontamination chamber.

3.0 DOCUMENTATION

Each Subcontractor shall maintain documentation, as established by the Contractor, which shall record, at a minimum, the following information:

NYC-WTC_000134305

NYC 9/11 Public Portal Document

- The Subcontractor employees on Site, including arrival and departure times and their destination at the Site.
- Information required to be maintained by the OSHA respiratory protection standard, including medical clearance documents, training and certification records, fit-test records, and the results of personal air monitoring used to determine employee exposures. Additionally, all medical and sampling documentation required by OSHA's Lead in Construction standard must be maintained.
- Area air testing results
- Incidents and unusual activities that occur at the Site, including but not limited to injuries, illnesses, accidents, spills, breaches of security, equipment failures, weather-related problems and near-misses.
- Records of daily safety briefings, including attendance documentation for all employees required to attend.
- Records of health and safety inspections by governmental agencies
- Records of corrective actions performed in response to any deficiencies noted through government agency inspection or by the Contractor SSM.

NYC-WTC_000134306

NYC 9/11 Public Portal Document

Attachment 1

List of Acronyms

ABIH	American Board of Industrial Hygiene
ACGIH	American Conference of Governmental Industrial Hygienists
ACBM	Asbestos Containing Building Materials
AL	Action Level
ANSI	American National Standards Institute
APR	Air-Purifying Respirator
CFR	Code of Federal Regulations
CGI	Combustible Gas Indicator
CIH	Certified Industrial Hygienist
COPCs	Contaminants of Potential Concern
CPR	Cardiopulmonary Resuscitation
CRZ	Contamination Reduction Zone
dBA	decibels adjusted (decibels on the "A" scale)
EC	Emergency Coordinator
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
ER	Emergency Response
ERT	Emergency Response Team
EZ	Exclusion Zone
f/cc	Fibers per cubic centimeter
FEC	Facility Emergency Coordinator
GFCI	Ground Fault Circuit Interrupter
H&S	Health and Safety
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCP	Hazard Communication Program
HCS	Hazard Communication Standard
HEPA	High Efficiency Particulate Air
HMTA	Hazardous Materials Transportation Act
IC	Incident Commander
IDLH	Immediately Dangerous to Life and Health
IH	Industrial Hygienist
lbs	pounds
LEL	Lower Explosive Limit
MAWP	Maximum Allowable Working Pressure
mg/m3	milligrams per cubic meter
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NYCDEP	New York City Department of Environmental Protection

NYC-WTC_000134307

NYC 9/11 Public Portal Document

SSM	Site Safety Manager
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limits
PM	Project Manager
ppm	parts per million
psia	pounds per square inch, absolute
psig	pounds per square inch, gauge
Q&P	Quality and Protection
SAR	supplied air respirator
SCBA	self-contained breathing apparatus
SOW	Scope of Work
SSHO	Site Safety and Health Officer
STEL	Short-Term Exposure Limit
SZ	Support Zone
TWA	Time-Weighted Average
WTC	World Trade Center

NYC-WTC_000134308

NYC 9/11 Public Portal Document

Attachment 2

Asbestos Surveys

NYC-WTC_000134309

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Attachment 3

HASP Acknowledgement Form

NYC-WTC_000134310

NYC 9/11 Public Portal Document

ATTACHMENT 3
Contractor/Sub-Contractor/Visitor HASP Acknowledgement

HASP Received by: _____ Date: _____

Print Name _____

Affiliation: _____

Address _____ Phone_____

HASP Received by: _____ Date: _____

Print Name _____

Affiliation: _____

Address _____ Phone_____

HASP Received by: _____ Date: _____

Print Name _____

Affiliation: _____

Address _____ Phone_____

HASP Received by: _____ Date: _____

Print Name _____

Affiliation: _____

Address _____ Phone_____

HASP Received by: _____ Date: _____

Print Name _____

Affiliation: _____

Address _____ Phone_____

NYC-WTC_000134311

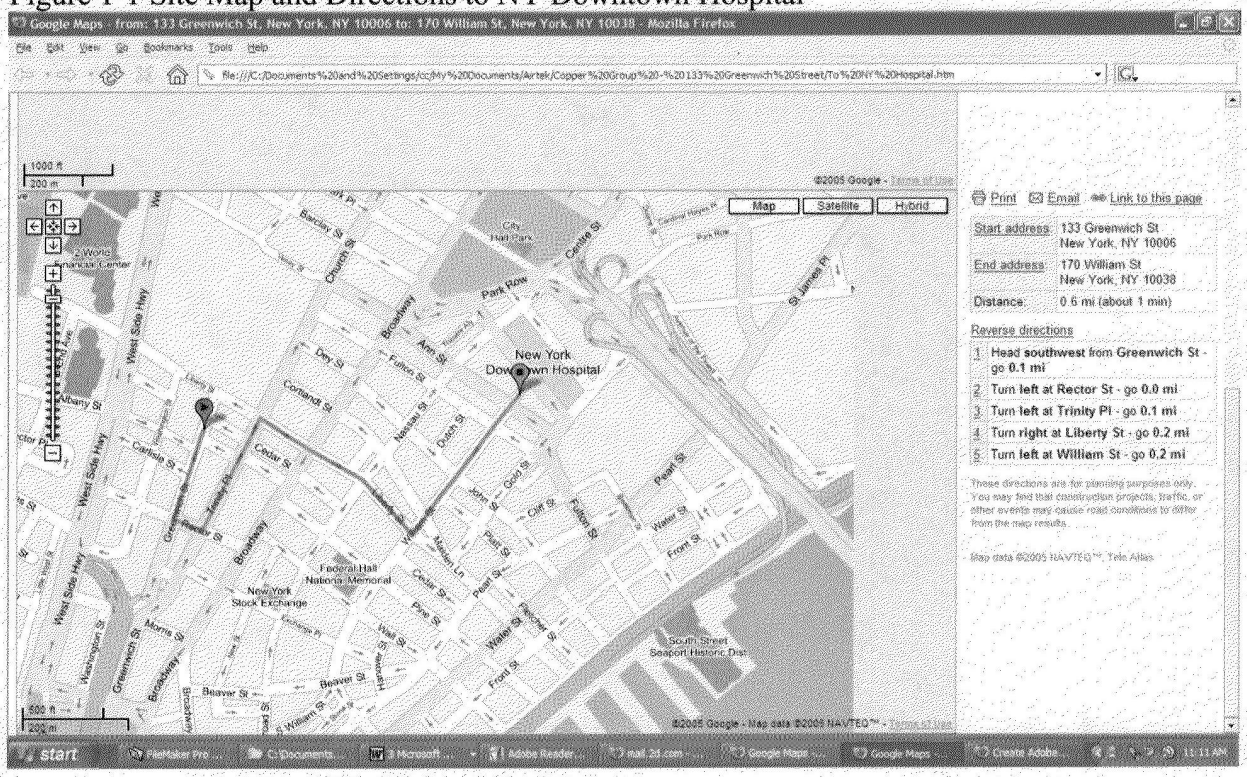
NYC 9/11 Public Portal Document

_____ is the designated Contractor Safety Officer (IH) for this project. His contact numbers are _____ _____ as indicated in Attachment A. These are the primary Contractor emergency contact phone numbers, and both are 24-hour contact numbers. The SSO's base of operations will be the Contractor's field office (trailer). In the event that Mr. _____ is not on site, an alternate SSO will be designated and will be responsible for ensuring proper implementation of this HASP.

NYC-WTC_000134312

NYC 9/11 Public Portal Document

Figure 1-1 Site Map and Directions to NY Downtown Hospital



NYC-WTC_000134313

NYC 9/11 Public Portal Document

Attachment 4

CONTACTS/EMERGENCY TELEPHONE NUMBERS

PROJECT NAME: 133-135 GREENWICH/21-23 THAMES STREET ABATEMENT PHASE DECONSTRUCTION PROJECT

THE FOLLOWING ARE THE BUSINESS AND HOME TELEPHONE NUMBERS WHERE PROJECT PERSONNEL CAN BE REACHED AT ALL TIMES. IN ADDITION, THE EMERGENCY TELEPHONE NUMBERS OF OTHER VITAL AGENCIES ARE LISTED.

AIRTEK CORPORATION (212)768-0516

PRINCIPAL:	Benn Lewis	MOBILE	(917) 295-0810
SENIOR PROJECT MANAGER:	Mike Porter	MOBILE	(917) 337-4325
ALT. PRINCIPAL:	Mike Zouak	MOBILE	(917) 495-9242
CIH	Clifford Cooper	MOBILE	(914) 388-9796

CONSTRUCTION MANAGER:
HEALTH & SAFETY OFFICER:

CONTRACTOR

SITE MANAGER
CONSTRUCTION SAFETY OFFICER (CSO)

LOCAL EMERGENCY TELEPHONE NUMBERS

FIRE	911				
AMBULANCE	911				
HOSPITAL	NYU Downtown Hospital	170 William St	911	OR	(212) 312-5000
POLICE	NYC Police Dept	2 Lafayette St	911	OR	(917) 454-1100

NYSDEC Spill Response	(800) 457-7362
Poison Control Center	~~(800) 962-1253~~
National Response Center	(800) 424-8802

NYC DEP 311 ASK FOR DEP REP.

NYC-WTC_000134314

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Part IV

Waste Sampling and Management Plan for the Abatement and Demolition of 133-135 Greenwich Street and 21-23 Thames Street

Prepared for:

The Greenwich Street Project, LLC
666 Fifth Avenue
New York, New York

Prepared by:

Airtek Environmental Corp.
39 West 38th Street
New York, NY 10018

212-768-0516

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NYC 9/11 Public Portal Document

Table of Contents

1.0 General 3
- 1.1 Objective
- 1.2 Background
- 1.3 Abatement Phase
- 1.4 Conventional Demolition Phase
- 1.5 Waste Determination

2.0 Building Components 4
- 2.1 Contaminants
- 2.2 Deconstruction Waste
- 2.3 Miscellaneous Materials
- 2.4 Structure and Façade

3.0 Waste Characterization Background Data 5
- 3.1 Illustrative Data – 130 Liberty Street
- 3.2 Site Data

4.0 Waste Characterization Strategy 6
- 4.1 Contaminants
- 4.2 Deconstruction Waste
- 4.3 Miscellaneous Materials
- 4.4 Structure and Façade

5.0 Analytical Methodologies 8
- 5.1 Ignitability
- 5.2 Corrosivity
- 5.3 Reactivity
- 5.4 Toxicity

6.0 Sampling Frequencies 11
- 6.1 Contaminants
- 6.2 Deconstruction Waste
- 6.3 Miscellaneous Materials
- 6.4 Structure and Façade

7.0 Non-porous (Cleanable) Waste 14

8.0 Waste Packaging 15
- 8.1 Hazardous Waste
- 8.2 Universal Waste
- 8.3 Asbestos Waste
- 8.4 Exterior Wash Water
- 8.5 PCB Waste

9.0 Transportation Requirements 16

10.0 Travel Routes 17

11.0 Disposal Facilities 17

12.0 Documentation 17

Attachment A: Site Waste Sampling Data
Attachment B: Building Content Inventory

NYC-WTC_000134316

NYC 9/11 Public Portal Document

1.0 General

1.1 Objective

The objective of the Waste Management Plan (WMP) is to characterize, manage, containerize, and legally transport and dispose of waste streams that will be generated as part of the 133-135 Greenwich Street/21-23 Thames Street Deconstruction Project.

1.2. Background

The Copper Group, Inc. has engaged Airtek Environmental Corp. (Airtek) to prepare the following project plan in support of the de-construction of the buildings located at 133-135 Greenwich Street and 21-23 Thames Street, New York, NY. This plan is in response to a request by the WTC Regulators for a documented approach to the project.

Though they sustained little physical damage, the buildings at 133-135 Greenwich Street and 21-23 Thames Street were impacted in places by fallout from the events of September 11, 2001. It is the Owner's intent to conduct abatement of in-place asbestos, and to effect a decontamination of the interior of the building so that conventional demolition activities can be completed.

1.3 Abatement Phase

The Abatement Phase of the project includes the cleaning and removal of all interior surfaces and non-structural elements within the building under containment. The cleanup and abatement will be conducted so that the building can be safely deconstructed to allow for redevelopment of the Site. The abatement Phase of the project will occur under negative pressure containment and includes the following general categories: (a) the general area cleanup of WTC dust and debris; (b) removal and disposal of installed porous and certain non-porous building materials and components; (c) cleaning and salvage of certain installed non-porous building equipment and components; (d) removal of building materials containing asbestos which were present in the Building prior to September 11th, 2001; (e) packaging of asbestos and other regulated waste including, but not limited to light bulbs, lighting ballasts, batteries, mercury-containing thermostats, etc. at generation points; (f) movement of containers to the decontamination unit and movement of decontaminated containers to waste loading.

1.4 Conventional Demolition Phase

NYC-WTC_000134317

NYC 9/11 Public Portal Document

The Conventional Demolition Phase of the project includes the structural deconstruction of the remaining cleaned and encapsulated wood framing, and the masonry façade.

1.5 Waste Determinations

The Environmental Consultant will characterize the waste streams as they are generated. Based on the results of this characterization, once analytical results are received, the Environmental Consultant will issue an addendum to the Plan, if necessary. The Contractor or its authorized representative will ensure proper handling and disposal activities as described in this Plan.

2.0 Building Components

This WMP has been developed to address the removal of all building contents and components, including waste generated by the Abatement Phase (i.e., asbestos and COPC removal abatement, and soft strip/interior gut) and the Conventional Demolition Phase (structural framing and masonry façade). Anticipated waste streams are listed below:

2.1 Contaminants

ACBM/Pb
WTC Impact COPCs

2.2 Deconstruction Waste:

Wall and Ceiling Plaster
Suspended ceiling tiles and support grid
Carpeting and other permeable flooring
Gypsum Wall Board (GWB) and associated partition framing
Fiberglass and other misc. insulation
Door Systems and Window Systems
Mechanical Electrical Plumbing (MEP) components including, but not limited to, heating, ventilation and air conditioning [HVAC] systems, plumbing, wiring, refrigeration equipment and kitchen components.

2.3 Miscellaneous Materials

Due to the small scale, and commercial/residential use of the buildings and their systems, additional regulated and/or hazardous waste is anticipated to be very limited in nature and scope. Irregardless, the WMP addresses the potential for regulated waste in the following categories:

Light ballasts and potting material
Lamps
Refrigerants
Fire extinguishers

NYC-WTC_000134318

NYC 9/11 Public Portal Document

Commercial/Residential Lessee Items
Transient Resident Items

2.4 Structure & Façade

At completion of the Abatement Phase only the wooden framing and exterior masonry & metal façade materials of the buildings will remain. The interior materials will have been spray-encapsulated, and the exteriors will have been low-pressure washed.

The classification of building components and contents will be an ongoing effort and will be conducted by the Environmental Consultant in accordance with applicable New York City, New York State and federal laws, rules, and regulations. This Plan is intended as a working document to be used during ongoing operations at the Site, and will be updated as necessary as new information becomes available.

3.0 Waste Characterization Background Data

Illustrative data and the limited site data available are useful for overall project planning, but this data is not intended to substitute actual waste stream sampling to be conducted by the Environmental Consultant.

3.1 Illustrative Data – 130 Liberty Street

The TRC Preliminary Waste Characterization Study conducted at 130 Liberty Street, 50 feet from the subject site, indicated the following:

"Fourteen representative composite bulk dust (six samples) and anticipated waste stream/building material (eight) samples were collected on various floors of the Building and analyzed for Resource Conservation and Recovery Act (RCRA) Characteristics and full Toxicity Characteristic Leaching Procedure (TCLP) analysis. Results of the 14 samples were compared to criteria provided in 40 CFR Part 261 sections 21 through 24 and Environmental Protection Agency Publication SW 846 Chapter 7. None of the 14 samples collected exceed the criteria provided in 40 CFR Part 261 sections 21 through 23 or SW 846 Chapter 7. None of the eight building material samples exceeded the Maximum Concentration of Contamination for the Toxicity Characteristics provided in 40 CFR section 261.24. One of the six composite bulk dust samples, collected in a mechanical room on the 40th floor, exhibited levels of cadmium that exceeded 40 CFR section 261.24. This sample exceeded the cadmium maximum concentration of 1.0 mg/L with a result of 6.2 mg/L. (Additional sampling will be conducted to determine whether specific equipment or surface coatings in the 40th Floor mechanical room contributed to the cadmium levels.)."

3.2 Site Data

Although dust available for sampling at the subject site is very limited (Obvious WTC Dust impact was noted only in the kitchen of the second floor of the 133-135 Greenwich Street Building), dust sampling and TCLP analysis was conducted on one sample composited from samples collected in three areas of the above-referenced kitchen. Compositing of the samples was required in order to meet the total mass requirements of the analytical method.

NYC-WTC_000134319

NYC 9/11 Public Portal Document

Results of the sample have been compared to criteria provided in 40 CFR Part 261 sections 21 through 24 and Environmental Protection Agency Publication SW 846 Chapter 7. The sample does not exceed the criteria provided in 40 CFR Part 261 sections 21 through 23 or SW 846 Chapter 7.

Given the limited nature of the sampling, no broad conclusions on waste characterization can be drawn from these results.

4.0 Waste Characterization Strategy

Waste generated during the project will be characterized, managed, transported and disposed of in compliance with this Waste Management Plan and applicable regulations.

4.1 Contaminants

Full-building asbestos surveys have been conducted. In-place ACBM has been identified, located and included in the Project Plan. No further characterization will be conducted unless site conditions reveal additional suspect materials not addressed in the ACBM surveys.

WTC Dust is assumed to exist at the site.

4.2 Deconstruction Waste

Dust sampling for hazardous waste characteristics has been performed in advance of sampling of materials impacted by dust. It is anticipated that the dust classification sampling will indicate that the dust is not a characteristic hazardous waste, and then by extension, any non-hazardous materials potentially impacted by dust (i.e., the Deconstruction Waste listed in subsection 2.2 above) would also not be hazardous. Due to the limited nature of the preliminary sampling, confirmatory sampling of the various deconstruction waste categories will be conducted to confirm this prior to commencement of any site work.

Those materials would then not be sampled for Resource Conservation and Recovery Act (RCRA) characteristics unless there is an independent concern that they might be hazardous waste due to the inherent composition of the component, subcomponent or waste stream (e.g., light ballasts which may contain PCBs, items coated with lead-based paint).

Porous deconstruction waste will be disposed of according to the results of waste characterization sampling, and as ACM at a minimum.

Non-Porous Deconstruction Waste may be managed by either of two options. The Abatement Subcontractor may choose to clean the non-porous surfaces in accordance with procedures outlined in the Work Plan.

NYC-WTC_000134320

NYC 9/11 Public Portal Document

The resulting cleaned material will not be sampled unless it is painted; in that instance, sampling will be performed as described in Section 7.0 of this Plan. Alternatively, based on field conditions and decisions regarding the use of its labor force, the Abatement Subcontractor may choose to not clean the surfaces and instead manage those uncleaned non-porous materials as asbestos waste at a minimum or otherwise, if required, as determined by the RCRA characteristics sampling.

4.3 Miscellaneous Materials

Due to the small scale and simple use (commercial/residential) of the buildings and their systems, additional miscellaneous regulated and/or hazardous waste is anticipated to be very limited in nature and scope. The Environmental Consultant will conduct daily inspections of the abatement work area to identify suspect components for segregation and testing and/or other determination.

Any material classified as "unknown" during the project will require sample collection and analysis for full RCRA characteristics in accordance with 40 CFR Part 261 (as described in Section 4.1.3 of this Plan) and will be disposed of based upon the results of that sampling and the nature of the waste. If the material is classified as RCRA hazardous waste, additional sampling may be required for "total" concentrations of specific contaminants to determine whether the waste may be land filled or is restricted from land disposal pursuant to 40 C.F.R. Part 268; the contaminants to be analyzed for will depend on the specific waste classification of the waste.

4.4 Structure and Façade

Dust sampling for hazardous waste characteristics has been performed in advance of sampling of materials impacted by dust. It is anticipated that the dust classification sampling will indicate that the dust is not a characteristic hazardous waste, and then by extension, any non-hazardous materials potentially impacted by dust (i.e., the Structure & Façade of the building would also not be hazardous. Due to the limited nature of the preliminary sampling, confirmatory sampling of the various deconstruction waste categories will be conducted to confirm the status of the structure and facade prior to commencement of the demolition phase.

For materials requiring sampling, a representative sampling strategy will be used as detailed in section 6.0, and composite samples representative of the final waste streams will be collected. The locations and frequency of samples to be combined into composite samples shall be determined by the Environmental Consultant such that a representative sample of the waste type has been obtained. All sampling personnel shall be familiar with sample collection and waste storage protocols and shall have undergone Hazard Communication training in

NYC-WTC_000134321

NYC 9/11 Public Portal Document

accordance with 29 CFR section 1910.1200 as well as being trained appropriately per the Health and Safety Plan.

The waste classification samples will be sent to a New York State Environmental Laboratory Approval Program (ELAP) certified (6 NYCRR Section 370.1(f)) and qualified laboratory for waste classification analysis (e.g., TCLP and RCRA characteristics) to determine appropriate waste classification and handling requirements (40 CFR section 262.11). Other sampling and laboratory analysis may be required by the disposal facility prior to waste acceptance. The laboratory subcontracted to perform the analysis will be also be certified through the National Environmental Laboratory Accreditation Program (NELAP) for the analytical parameters being analyzed, so there is assurance that the laboratory has passed a nationally recognized quality assurance program that includes audits, analysis of blind performance samples to check data quality and meeting certain minimum technical standards for the qualifications of testing personnel.

Upon receipt of analytical results, determination of waste classification and identification of disposal facilities, the Environmental Consultant will identify applicable regulatory requirements for waste handling, worker training and protection (e.g., specific training/certifications, personal protection equipment [PPE]), packaging (e.g., type of packaging, marking, labeling), transporting (e.g., placarding, shipping papers), waste routing and disposing of these wastes. Since waste classification samples will be collected from in-place materials, on-site storage of deconstruction wastes for waste classification will not be required. Rather, all removed materials will be placed into their applicable disposal containers/vehicles for off-site shipment. All potentially hazardous waste will be managed as hazardous waste until analytics prove otherwise.

If greater than 100 kg/month of hazardous waste is generated during the deconstruction process, Contractor will comply with, among other things, 6 NYCRR Part 373, Subpart 373-3, section 373-3.3(b).

If results of waste characterization sampling and analysis dictate that waste material must be managed and disposed of as both an asbestos and a hazardous waste, both asbestos and hazardous waste management and disposal requirements will be met. If there are conflicts between the requirements for asbestos and hazardous waste that preclude compliance with both, then the hazardous waste requirements will dictate specific management and disposal requirements.

5.0 Analytical Methodologies

Analyses conducted to support waste characterization will be performed according to the following methodologies. Where more than one method is identified, each analytical method is valid per the regulations. All allowable methods are included in this plan to allow for flexibility in selecting an analytical laboratory(ies).

NYC-WTC_000134322

NYC 9/11 Public Portal Document

5.1 Ignitability

The characteristic of ignitability carries the RCRA waste code of D001, and may be analyzed for using American Society of Testing Materials (ASTM) method D-93-79 or D-93-80 or D-3278-78.

5.2 Corrosivity

The characteristic of corrosivity carries the RCRA waste code of D002, and may be analyzed using Method 9045D or 9040C as set forth in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. SW-846 method 9040 C is for aqueous wastes and multiphase waste where the aqueous phase constitutes at least 20% of the total volume of the waste; 9045D is for soils and waste samples where the waste may be solids, sludges, or non-aqueous liquids. The aqueous phase must be less than 20% of the total volume of the waste. National Association of Corrosion Engineers (NACE) Standard TM-01-69 as standardized in SW-846 shall be utilized to evaluate corrosion rate if the suspected corrosive hazardous waste is a liquid.

5.3 Reactivity

The characteristic of reactivity carries the RCRA waste code of D003, and may be analyzed using the analytical methods outlined in sections 7.3.3.2 or 7.3.4.2 of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. The referenced sections are from SW-846 Chapter Seven: Characteristics Introduction and Regulatory Definitions. They are specifically for Reactivity. Chapter Seven was revised to reflect the withdrawal of the reactive cyanide and sulfide guidance in sections 7.3.3 ("Interim Guidance for Reactive Cyanide") and 7.3.4 ("Interim Guidance for Reactive Sulfide"), and to replace certain characteristic explanatory text with referrals to the regulations themselves. This change can be found in the Proposed Update IIIB to SW-846.

5.4 Toxicity

The characteristics of toxicity carry the RCRA waste codes of D004 through D043. Each waste code identifies the specific chemical component for which the waste is classified as toxic. The samples to be analyzed for the characteristic of toxicity must be prepared using the Toxicity Characteristic Leaching Procedures (TCLP) per Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. The analytical method applied to the resulting leachate depends on the type of chemical being analyzed for, as follows:

– Volatile organic compound (VOC) toxic constituents will be analyzed by Method 8260B of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. VOC toxic constituents include benzene (D018), carbon tetrachloride (D019),

NYC-WTC_000134323

NYC 9/11 Public Portal Document

chlorobenzene (D021), chloroform (D022), 1,4-dichlorobenzene (D027), 1,2-dichloroethane (D028), 1,1-dichloroethylene (D029), methyl ethyl ketone (D035), tetrachloroethylene (D039), trichloroethylene (D040), and vinyl chloride (D043).

– Semivolatile organic compound (SVOC) toxic constituents will be analyzed by Method 8270C of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. SVOC toxic constituents include 2,4-dinitrotoluene (D030), hexachlorobenzene (D032), hexachlorobutadiene (D033), hexachloroethane (D034), o-cresol (D023), m-cresol (D024), p-cresol (D025), cresol (D026), nitrobenzene (D036), pentachlorophenol (D037), pyridine (D038), 2,4,5-trichlorophenol (D041), and 2,4,6-trichlorophenol (D042).

– Pesticide toxic constituents will be analyzed by Method 8081A of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. Pesticide toxic constituents include chlordane (D020), endrin (D012), heptachlor and its epoxide (D031), lindane (D013), methoxychlor (D014), and toxaphene (D015).

– Herbicide toxic constituents will be analyzed by Method 8151A of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. Herbicide toxic constituents include 2,4-D (D016) and 2,4,5-TP (also known as Silvex, D017).

– Mercury (D009) will be analyzed by Method 7470A (aqueous samples) of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846.

– Metals/inorganics other than mercury will be analyzed by Method 6010B of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. These constituents include arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), selenium (D010), and silver (D011).

Generally, building components would not be considered as possible RCRA characteristic wastes except for the potential that exists due to impacts by WTC dust. The notable exceptions to this would be painted surfaces (which would typically be sampled for TCLP RCRA Metals), as well as miscellaneous materials containing hazardous components prior to WTC impact (such as transformers, ballasts, lamps, etc.).

The results of RCRA characteristic analyses, the classification of the material based on historical information, as well as the material's status as presumptively asbestos-contaminated, will be used as the basis for the Waste Profile for the particular waste stream.

NYC-WTC_000134324

NYC 9/11 Public Portal Document

6.0 Sampling Frequencies and Disposal

6.1 Contaminants

The limited ACBMs at the site have been identified and located. Limited WTC Dust sampling has been conducted. Where further WTC dust can be identified, further sampling will be conducted to support waste classification prior to removals off-site. Detailed information on sampling locations will be documented. A detailed sampling scheme cannot be developed until further dust is encountered. Where possible, each floor of each building will represented within any composite sample.

6.2 Deconstruction Waste

For each of the Deconstruction Waste Materials listed in section 2.2 above, a minimum of five confirmatory waste samples will be collected from different locations and functional spaces in each building (a minimum of five samples per building, with each floor of each building represented. Each building's samples will be composited for analysis (one analysis per material, per building). Where it is deemed appropriate by the Environmental Consultant, more samples may be collected and analyzed. Results will be available prior to the commencement of site removals.

6.3 Miscellaneous Materials

Due to the small scale, and simple use (commercial/residential) of the buildings and their systems, additional miscellaneous regulated and/or hazardous waste is anticipated to be very limited in nature and scope. The Environmental Consultant will conduct daily inspections of the abatement work area to identify suspect components for segregation and testing and/or other determination. The Environmental Consultant will make determinations as to the appropriate testing required to characterize any materials encountered. Where possible, each floor of each building will represented within any composite sample of miscellanoues waste, and the minimum of five grab samples to composited will be observed.

In general, the following will apply:

6.3.1 Light Ballasts and other PCB Wastes:

During deconstruction activities, as ballasts are removed from lighting fixtures, the Abatement Subcontractor shall clean the surfaces of dust and containerize ballasts for disposal as PCB waste. All ballasts, including those labeled "No PCB" will be containerized for disposal as PCB waste due to the presence of potting material. For potentially PCB-containing equipment other than ballasts, PCB samples may be required to determine whether the dielectric fluid contains more than 50 parts per million (ppm)

NYC-WTC_000134325

NYC 9/11 Public Portal Document

PCBs, which would make the equipment subject to the PCB regulations. SW-846 Method 8082, Analysis of Polychlorinated Biphenyls by Gas Chromatography is specified by regulation for determining the concentration of PCBs in wastes.

Ballasts (all assumed to contain PCBs) shall be handled, packaged and labeled as required for disposal as a PCB regulated waste. All hauler, transportation and disposal facility requirements shall also conform to the requirements for this category of waste.

Shipments of PCB waste must be in properly labeled and marked containers, the waste must be shipped under a properly executed manifest and Land Disposal Restriction (LDR) form, the transporter must have a valid EPA Identification number and must have a valid New York State Part 364 transporter permit as well as the latest version of U.S. Department of Transportation's Emergency Response Guide (2004). The vehicle in which PCB wastes are being shipped must be properly placarded and marked to reflect that it is transporting PCBs and must also be marked with the New York State waste transporter permit number on its sides and rear.

Disposal facilities that accept PCB wastes must have an EPA Identification number and have received TSCA authorization from the EPA and any additional state permits for the disposal/management of PCBs applicable to the state in which the facility is located. The disposal facility must comply with all manifesting requirements specified in the regulations and must prepare a certificate of destruction and send it to the generator or the generator's agent.

6.3.2 Universal Waste

Only minor quantities of materials that could be categorized as Universal Waste are anticipated to be encountered at this site. In the event that such materials are encountered, they are addressed by this WMP.

40 CFR Part 273 and 6 NYCRR Section 374.3 establish requirements for managing universal wastes. Universal wastes are those wastes that would reasonably be expected to be classified as hazardous wastes but, due to their universal use in industrial and residential properties, regulations were created that would ensure that they were managed in a manner that prevented harm to the environment while reducing the regulatory burden on generators of these wastes.

Universal wastes include the following waste types:

NYC-WTC_000134326

NYC 9/11 Public Portal Document

(1) Batteries as described in 40 CFR section 273.2 and 6 NYCRR Section 374-3.1(b)

(2) Pesticides as described in 40 CFR section 273.3 and 6 NYCRR Section 374-3.1(c)

(3) Thermostats as described in 40 CFR section 273.4 and 6 NYCRR Section 374-3.1(d)

(4) Lamps as described in 40 CFR section 273.5 and 6 NYCRR Section 374-3.1(e)

Given that such wastes will be minor in quantity at this site, these wastes, if encountered, will be managed according to hazardous waste regulations.

6.3.3 Refrigerant-containing Equipment

Non-hazardous construction and demolition materials may contain regulated refrigerant including, but not limited to, possible refrigerant in the air conditioning and refrigeration systems. The refrigerant will be removed prior to disposal. Refrigerant-containing Equipment would be considered an appliance and is excluded from definition of C&D debris. For refrigerant-containing equipment the following procedures shall be followed:

Verify refrigerant has been removed. If not, a licensed refrigerant removal service must be called to properly dispose of refrigerant.

Equipment that contains refrigerant and will be HEPA vacuumed and wet-wiped before being staged in a clearly demarcated on-site area until the refrigerant has been removed by a licensed refrigerant removal service.

Remove door on refrigerators and freezers.

After removal of refrigerant and otherwise rendering the appliance safe, recycle or dispose of the appliances as scrap metal or as municipal solid waste, respectively.

6.3.4 Bagged Accumulated Waste

The building currently contains miscellaneous bagged accumulated waste, primarily associated with occupancy by transient (squatting) occupants and pre 9/11 Commercial/Residential Lessees. Studies conducted by the building owner's team indicate that these are primarily clothing and used food containers. These materials will be inspected, categorized (clothing, food garbage, etc.) sampled for RCRA characteristics, and disposed of as

NYC-WTC_000134327

NYC 9/11 Public Portal Document

asbestos-containing wastes at a minimum. Sampling representability will be as described in section 6.2.

6.3.5 Fuel

No Fuel Storage is known to exist at the site. Heat for both buildings was generated by natural gas from the street. Kitchen equipment was fuelled by the same gas system, and by electricity. Two Phase I Environmental Site Assessments were conducted for the site. Neither assessment identified fuel sources or suspected fuel sources.

6.3.6 Fire Extinguishers

In the case of both charged and discharged fire extinguishers, the manufacturer of the fire extinguisher will be contacted for the proper discharge and disposal method. Alternately, local fire department(s) may be contacted to determine if they would like to acquire the charged fire extinguishers in volunteer or community training exercises. If the above approaches prove impractical, fire extinguishers shall be depressurized in accordance with manufacture's recommendations and all regulatory requirements. Contained media shall be collect upon depressurization, characterized, and recycled or disposed, if and as required. Empty extinguisher bodies shall be rendered inoperable by cutting in half or puncturing, then recycling as scrap metal or disposing as municipal solid waste. If fire extinguishers are found, the Environmental Consultant will make a determination.

6.4 Structure & Façade

Sampling of the structure and façade materials will be conducted to confirm the waste status of the structure and facade prior to commencement of the demolition phase. For each of the structural and façade material categories noted at the site, five confirmatory waste samples will be collected and composited for analysis (one analysis per material, per building). Samples will be collected from various locations and functional spaces within each building. Sample representability will be as described in Section 6.2. Results will be available prior to the commencement of the demolition phase.

7.0 Non-porous (cleanable) Waste

For cleaned (wet-wiped/HEPA-vacuumed) non-porous deconstruction waste, TCLP Metals samples will not be collected unless the non-porous components are painted and to be disposed of (i.e., not recycled). Cleaned painted scrap metals that are recycled are exempt from the below described waste characterization sampling and analysis. For non-porous components that are painted, one composite sample made up of a minimum of

NYC-WTC_000134328

NYC 9/11 Public Portal Document

four grab samples of each distinct painted non-porous building component (based on paint color, building component type and zone in which the component is located) will be collected for TCLP RCRA metals analysis. Each grab sample will be collected as a core sample (i.e., both painted surface and building component matrix) and sent to the lab under COC for analysis.

Likewise, cleaned, painted, non-porous deconstruction waste with TCLP RCRA metals results of less than applicable standards would also be classified, managed and recycled/disposed of as non-hazardous C&D debris.

Cleaned, painted, non-porous deconstruction waste with TCLP RCRA metals results greater than applicable standards would be classified, managed and disposed of as hazardous waste with the toxicity characteristic of the exceeded RCRA Characteristic.

Cleaned, unpainted, non-porous deconstruction waste will be visually inspected by the Environmental Consultant, and may be recycled and/or disposed as C&D waste if TCLP metals analyses of surface dust wipes meet RCRA criteria for disposal. The Environmental Consultant will make determinations on representativity of waste sampling based on the quantity and nature of such wastes encountered. In general, the protocols followed for representavity other site waste sampling, and as described in Section 6.0 will be followed.

Non-cleaned, non-porous deconstruction waste will be disposed of as asbestos waste at a minimum for the reasons indicated previously. Should results of the settled dust classification sampling indicate that the dust results exceed the regulatory threshold for one or more RCRA characteristics, the waste will be managed as both a RCRA waste of the appropriate waste code as well as asbestos waste.

8.0 Waste Packaging

Due to space restrictions (i.e., requirement that a waste storage facility be located 15 meters (50 feet) from a property line), waste will be not be stored on the site. Incompatible waste streams will be segregated and handled as separate operations at separate times. All containers on site will have proper labeling, which includes information such as waste type and accumulation date.

8.1 Hazardous Waste

Hazardous waste will be placed in containers (e.g., USDOT approved drums, bags, roll-off containers) and transferred to the waste decon for immediate off-site disposal. While being accumulated on-site, each container shall be labeled or marked clearly with the words, "Hazardous Waste". Containers will be inspected to ensure containers are not over packed or leaking. Hazardous waste will not be placed in an unwashed container that previously held an incompatible waste. Any disposal container holding a hazardous waste that is incompatible with any waste or other materials contained nearby will be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

NYC-WTC_000134329

NYC 9/11 Public Portal Document

8.2 Universal Waste

Universal waste will be treated as a separate operation at a separate time according to hazardous waste regulations. See 8.1 above.

8.3 Asbestos Waste

Waste containing asbestos will be wet down to prevent visible emissions of asbestos dust into the air. The asbestos waste will be sealed while wet in a leak-tight container. A supply of leak tight containers will be kept in the waste storage area to provide adequate repackaging if a break in the container should occur. Storage area shall be maintained under a negative pressure ventilation system. Daily inspections of the waste storage area shall be required. Ref. Title 15, Chapt. packaging and waste decon

Storage of asbestos waste will not exceed 50 cubic yards. Authorization from the New York City Department of Sanitation (NYCDOS) and additional requirements, per code, will be required if accumulation of asbestos is anticipated to be greater than 50 cubic yards. Containers holding asbestos waste will be inspected daily to ensure no visible emissions of asbestos dust in the air or breaks in the container.

8.4 Exterior Wash Water

Wash water collected per the Work Plan shall be pumped to new, clean 55-gallon drums. Aliquots from each drum of wash water will be collected. For each day of work, the aliquots will be composited into one sample to be analyzed for Full TCLP and RCRA characteristics. If the water is not regulated under RCRA, it will be filtered through a 5 micron filter prior to disposal to the NYC sewer system per NYC Title 15, Part 1-82 (b) 1. If testing indicates the water is regulated under RCRA, it will be handled, packaged and disposed of in strict accordance with its categorization. Until its determination as hazardous waste, it will be stored in the ACM waste decontamination unit as permitted by NYC DEP Title 15. All filtration media and PPE associated with this operation will be handled as ACM waste pending HazWaste determination.

8.5 PCB Waste

Non-leaking waste PCB waste will be packaged in suitable containers and immediately loaded for disposal off site. Any leaking PCB articles or containers will be transferred to properly marked, non-leaking containers or an over-pack container.

9.0 Transportation Requirements

All waste materials will be transported in accordance with applicable local, state and federal DOT regulations including, but not limited to, bills of lading, manifests, placards,

NYC-WTC_000134330

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etc. All wastes will be shipped using properly permitted vehicles operated by drivers with Commercial Drivers Licenses (CDLs) and Hazardous Materials endorsements. All hazardous waste will be shipped using transporters with RCRA identification numbers. The actual modes of transportation to be utilized will be determined following the identification of all anticipated waste streams and will take into account the location and distance to the selected disposal facility as well as cost considerations. All off-site shipments of waste will adhere to the site-specific transportation requirements. As required by NYSDEC (6 NYCRR Part 364) all hazardous and asbestos wastes will be transported using Part 364 permitted haulers.

10.0 Travel Routes

Travel route(s) will be determined following discussion with the appropriate regulatory agencies (e.g., New York City Department of Transportation), and the Lower Manhattan Construction Command Center (LMCCC). The selected waste transporter(s) will follow the designated travel routes. These routes cannot be determined until EPA approval of the project, as the timing and routing are interdependent on other project occurring in the area.

11.0 Disposal Facilities

Waste recycling/disposal facilities will be selected based on several factors including waste types, facility acceptance criteria, regulatory compliance history, etc. Only those facilities that have valid federal/state/local permits to accept the waste type proposed for recycling/disposal at the facility will be used.

12.0 Documentation

All applicable local, state and federal documentation and record keeping requirements/guidelines will be followed. Documentation for hazardous waste disposal includes hazardous waste determination documentation including all analytical results, Hazardous Waste Manifesting, EPA Generator ID, EPA transporter ID, EPA ID for waste disposal facility and waste storage locations and capacities. Also documented will be emergency notification and operating procedures, organizational chart, unexpected waste procedures, contractor involvement list and copies of the regulatory requirement certifications of transporters, disposal facilities, etc. Specific regulatory documentation may change depending on the types and amounts of waste to be generated. The Contractor shall be responsible for document management.

All documentation noted under this Section shall be retained for a period of not less than three years after the completion of the project.

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YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for

Airtek Environmental
39 West 38th St., 12th Floor
New York, NY 10018
Attention: Mike Porter

Report Date: 8/15/2005
Re: Client Project ID: 05-0701
York Project No.: 05080368

CT License No. PH-0723 New York License No. 10854

120 RESEARCH DRIVE STRATFORD, CT 06615 (203) 325-1371 FAX (203) 357-0166

NYC-WTC_000134332

Report Date: 8/15/2005
Client Project ID: 05-0701
York Project No.: 05080368

Airtek Environmental
39 West 38th St., 12th Floor
New York, NY 10018
Attention: Mike Porter

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on 08/11/05. The project was identifed as your project "05-0701 ".

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables .

All samples were received in proper condition meeting the NELAC acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All the analyses met the method and laboratory standard operating procedure requirements except as indicated under the Notes section of this report, or as indicated by any data flags, the meaning of which is explained in the attachment to this report, if applicable.

The results of the analyses, which are all reported on an as-received basis unless otherwise noted, are summarized in the following table(s).

Analysis Results

Client Sample ID			133 Greenwich St. 2nd Fl. Kitchen S. Side	
York Sample ID			05080368-01	
Matrix			WTC DUST	
Parameter	Method	Units	Results	MDL
TCLP Polynuc. Arom. Hydroc.(BN)	SW846-8270	ug/L	---	---
Acenaphthene			Not detected	10
Acenaphthylene			Not detected	10
Anthracene			Not detected	10
Benzo[a]anthracene			Not detected	10
Benzo[a]pyrene			Not detected	10
Benzo[b]fluoranthene			Not detected	10
Benzo[g,h,i]perylene			Not detected	10
Benzo[k]fluoranthene			Not detected	10
Chyrsene			Not detected	10
Dibenz[a,h]anthracene			Not detected	10
Fluoranthene			Not detected	10
Fluorene			Not detected	10
Indeno[1,2,3-cd]pyrene			Not detected	10
Naphthalene			Not detected	10
Phenanthrene			Not detected	10
Pyrene			Not detected	10

YORK

Client Sample ID			133 Greenwich St. 2nd Fl. Kitchen S. Side	
York Sample ID			05080368-01	
Matrix			WTC DUST	
Parameter	Method	Units	Results	MDL
TCLP Base/Neutral/Acids	SW846-1311/8270C	ug/L	---	---
1,4-Dichlorobenzene			Not detected	10
2,4,5-Trichlorophenol			Not detected	50
2,4,6-Trichlorophenol			Not detected	10
2,4-Dinitrotoluene			Not detected	10
Cresol (Total)			Not detected	10
Hexachloro-1,3-butadiene			Not detected	10
Hexachlorobenzene			Not detected	10
Hexachloroethane			Not detected	10
m-Cresol			Not detected	10
Nitrobenzene			Not detected	10
o-Cresol			Not detected	10
p-Cresol			Not detected	10
Pentachlorophenol			Not detected	50
Pyridine			Not detected	10
TCLP RCRA Metals	SW846-1311/6010	mg/L	---	---
TCLP Arsenic			0.029	0.010
TCLP Barium			0.249	0.010
TCLP Cadmium			0.020	0.005
TCLP Chromium			0.118	0.005
TCLP Lead			0.021	0.005
TCLP Selenium			Not detected	0.010
TCLP Silver			0.008	0.005
TCLP Mercury	SW846-1311/7470	mg/L	Not detected	0.0005
PCB	SW846-8080	ug/L	---	---
PCB 1016			Not detected	0.2
PCB 1221			Not detected	0.2
PCB 1232			Not detected	0.2
PCB 1242			Not detected	0.2
PCB 1248			Not detected	0.2
PCB 1254			Not detected	0.2
PCB 1260			Not detected	0.2
PCB, Total			Not detected	0.2
TCLP Pesticides/Herbicides	SW1311-8081,8151	ug/L	---	---
2,4,5-TP (Silvex)			Not detected	0.40
2,4-D			Not detected	0.40
Chlordane			Not detected	1.0
Endrin			Not detected	0.10
Heptachlor (and the epoxide)			Not detected	0.08
Lindane			Not detected	0.06
Methoxychlor			Not detected	0.10
Toxaphene			Not detected	1.0
TCLP Volatiles	SW846-1311/8260	ug/L	---	---
1,1-Dichloroethylene			Not detected	1
1,2-Dichloroethane			Not detected	1
1,4-Dichlorobenzene			Not detected	1
Benzene			Not detected	1
Carbon tetrachloride			Not detected	1
Chlorobenzene			Not detected	1
Chloroform			Not detected	1

YORK

Client Sample ID			133 Greenwich St. 2nd Fl. Kitchen S. Side	
York Sample ID			05080368-01	
Matrix			WTC DUST	
Parameter	Method	Units	Results	MDL
Methyl Ethyl Ketone			Not detected	10
Tetrachloroethylene			Not detected	1
Trichloroethylene			Not detected	1
Vinyl Chloride			Not detected	1

Client Sample ID			23 Thames St. 2nd Fl Window N. Side	
York Sample ID			05080368-02	
Matrix			CAULK	
Parameter	Method	Units	Results	MDL
PCB	SW846-3550B/8082	mg/Kg	---	---
PCB 1016			Not detected	0.06
PCB 1221			Not detected	0.06
PCB 1232			Not detected	0.06
PCB 1242			Not detected	0.06
PCB 1248			Not detected	0.06
PCB 1254			0.36	0.06
PCB 1260			0.10	0.06
PCB, Total			0.46	0.06

Units Key: For Waters/Liquids: mg/L = ppm ; ug/L = ppb For Soils/Solids: mg/kg = ppm ; ug/kg = ppb

Notes for York Project No. 05080368

1. The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation.
6. All analyses conducted met method or Laboratory SOP requirements.
7. It is noted that no analyses reported herein were subcontracted to another laboratory.

Approved By: Robert Q. Bradley
Managing Director

Date: 8/15/2005

YORK

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YORK
ANALYTICAL LABORATORIES, INC.
120 RESEARCH DRIVE
STRATFORD, CT 06615
(203) 325-1371 FAX (203) 357-0166

Field Chain-of-Custody Record

0508303768

Company Name	Report To:	Invoice To:	Project ID/No.
AIRTEK ENVIRONMENTAL	MIKE PORTER	AIRTEK	05-0701

Mike Porter
Samples Collected By (Signature)

MIKE PORTER
Name (Printed)

Sample No.	Location/ID	Date Sampled	Sample Matrix: Water	Soil	Air	OTHER	ANALYSES REQUESTED	Container Description(s)
MP01	183 GREENWICH ST. 2ND FL. KITCHEN S. SIDE	8-9-2005				WIPE DUST	FULL TCLP/TCLP PCBs/TCLP PAH's	(2) 5oz GLASS JARS
MP02	23 THAMES ST. 2ND FL WINDOW N. SIDE	8-9-2005				CAULK	FULL TCLP PCB's	(1) 4oz. GLASS JAR

Chain-of-Custody Record

Bottles Relinquished from Lab by	Date/Time	Sample Relinquished by	Date/Time	Sample Received by	Date/Time
		Mike Porter	8/9/2005		
Bottles Received in Field by	**Date/Time**	**Sample Relinquished by**	**Date/Time**	**Sample Received in LAB by**	**Date/Time**

Comments/Special Instructions
FAX RESULTS TO 212-768-0759 & EMAIL RESULTS TO MPORTER@AIRTEKENV.COM

Turn-Around Time
Standard X RUSH (define) ASAP

AUG-11-2005 11:03 FROM:AIRTEK ENVIRONMENTAL 12127680759 TO:12033570166 P.2
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NYC-WTC_00013433 7

YORK
ANALYTICAL LABORATORIES, INC.
120 RESEARCH DRIVE
STRATFORD, CT 06615
(203) 325-1371 FAX (203) 357-0166

Field Chain-of-Custody Record

05080308

Company Name	Report To:	Invoice To:	Project ID/No.	
AIRTEK ENVIRONMENTAL	MIKE PORTER	AIRTEK	05-0701	Mike Porter Samples Collected By (Signature) MIKE PORTER Name (Printed)

Sample No.	Location/ID	Date Sampled	Sample Matrix: Water	Soil	Air	OTHER	ANALYSES REQUESTED	Container Description(s)
MP01	183 GREENWICH ST. 2ND FL. KITCHEN S. SIDE	8-9-2005				WTC DUST	FULL TCLP/TCLP PCB's/TCLP PAH's	(2) 5oz GLASS JARS
MP02	23 THAMES ST. 2ND FL WINDOW N. SIDE	8-9-2005				CAULK	TCLP PCB's	(1) 4oz. GLASS JAR

Chain-of-Custody Record

Bottles Relinquished from Lab by	Date/Time	Mike Porter Sample Relinquished by	8/9/2005 Date/Time	Sample Received by	Date/Time
Bottles Received in Field by	Date/Time	Sample Relinquished by	Date/Time	8/11 9:20AM Sample Received in LAB by	Date/Time

Comments/Special Instructions
FAX RESULTS TO 212-768-0759 & EMAIL RESULTS TO MPORTER@AIRTEKENV.COM

Turn-Around Time
X Standard ___ RUSH(define)_____

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Attachment B
Inventory of Contents – Notes on waste Considerations
21-23 Thames Street

5 Story Building

Main entrance
- Paint is pealing on walls, multiple layers, can be suspect as LBP
- 2 ceiling light fixtures

Basement
- 2 mechanical light switches going into basement
- 1 light fixture at entrance
- 1 light fixture at bottom of stairs
- approximately twenty cases of bottled and caned drinks on floor
- 1 holding tank rusted non functional not sure use
- 2 water heaters (electric)
- 20 or so broken skids or pallets
- 1 circuit breaker, and 9 electrical meters on west wall
- 1 walk in refrigerator 8x8 SE corner
- 1 freezer about 3x6 SW corner
- 5 electrical panels and one circuit breaker SW corner South west room basement
- 2 light fixtures on west and east walls fluorescent

2nd floor

SE room
- WTC dust on horizontal surfaces
- Suspect ACM pipe insulation
- 1 light fixture

Hall
- 1 light fixture ceiling

Kitchen
- 1 stove
- 1 sink
- 2 mechanical switches

NE room
- 2 light fixture
- wood debris
- 3 tables
- 1 radiator
- window sill has light WTC dust

Bathroom
- 1 tub, sink , toilet
- 1 mechanical switch, 1 radiator

NW room
- 1 AC, 1 light fixture, garbage, residential debris

SW room

- 1 light fixture, lots of debris, combination trash clothes

3rd floor

Bathroom
- 1 sink, toilet, tub, radiator, heavy dust concentration on horizontal surfaces

SE room
- 1 light fixture 1 radiator, heavy debris

SW room
- 1 light fixture 1 radiator, debris light

NW room
- 1 light fixture 1 radiator,

NE room
- 1 light fixture 1 radiator, propane tank near window

Hallway
- 1 light fixture on ceiling

4th floor

SE room
- 1 stove and l refrigerator

SW room
- Debris and 1 light fixture and 1 radiator

NW room
- 1 radiator

1st bathroom 1 toilet
2nd bathroom 1 toilet and 1 radiator

Hallway
- 1 light fixture ceiling

5th floor

NW Room
- heavy debris some dust on floor

SW Room
- 1 light fixture

SE Room
- 1 light fixture heavy debris

NE Room
- 1 light fixture lots of debris

Hallway
- 1 light fixture

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Retail Level:

China Man Restaurant
- WTC dust, 2 counters, sushi bar, 3 sinks, 2 ovens, 3 refrigerators, 2 freezers 1 8x8 walk in refrig, 9 tables, 17 chairs.

Left side store front
- 1 toilet, 1 circuit breaker, 12 or so light fixtures, some debris on floor

***** all switches were mechanical flip switches (non-mercury), No thermostats were noted. No fuel sources were noted. Dust was concentrated on North Side of Building**

133-135 Greenwich Street

2 story building

Indian restaurant
- 9 tables, 1 hood vent, 5 chairs, 1 propane tank, 2 flip switches, counter

Shoe store,
- 1 toilet, sink, some debris, mold little water collecting in back,

Basement Below Indian restaurant,
- 1 generator, 1 freezer 8x8 metal shelves, 1 water boiler, 1 circuit breaker, 1 toilet and sink,

Adjacent room in basement went through holes in the walls.

- 1 freezer, 1 circuit breaker, lots of kitchen debris,

Small room
- 2 radiators, 1 generator for HVAC, 1 sink,

Adjacent room, under sushi bar
- 1 boiler, 1 walk in subz, 8x8 1 switch, microwave, 9 meters, circuit breaker, wood debris, pipes,

Adjacent room, under the deli,
- 1 large freezer 16x8, 5 or so light fixtures, access was restricted due to heavy debris in hallway.

Deli
- 2 sinks, two countertops, 2 hood vents, lots of debris

Sushi bar 1st floor
- 2 stoves, 1 deep fryer and oil in it, 1 subz 12 bar stools and a sushi bar counter

Main entrance to japanese restaurant
- 12 lights in ceiling, lots of debris and mold

2nd floor

Bar
- One thermostat, lights above bar 4, horizontal surfaces have WTC dust, some debris throughout the floor in restaurant area, 1 sushi bar set with hood vent and two subz, 9 HVAC vents,

Kitchen

- WTC dust on everything, 4 ovens, 1 deepfryer, 3 subz 1 walk in 8x8, 2 hood vents, 1 dish washer, 1 propane tank, 1 circuit breaker, 12 switches, three light fixtures,

Mens bathroom,

- 1 toilet, 2 urinals, 1 hand dryer, 2 sinks, 1 light fixture

Womens room

- 2 sinks, 2 toilets, 1 hand dryer 1 light fixture

Roof HVAC unit

Pizza restaurant

- Counter, 1 refrigerator, hood vent, I sink and toilet

Basement

- 2 stoves and walk in freezer, empty cash register, pots on stove 3 light fixtures.

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Response to Comments on

Part I
Revised Work Plan
for Abatement and Demolition of
133-135 Greenwich Street and 21-23 Thames Street
Re-submitted August 11, 2005

General Comments

1. The pages of the Revised Work Plan for Abatement and Demolition still need to be numbered and the Table of Contents should reference the page that a specific section can be found.

Pages are numbered, and Contents references section page numbers.

2. The Plan remains unclear about whether Airtek addressed EPA's comment #12 on the Revised Work Plan For Abatement and Demolition since there was no response to this comment: "Will the stairwells be cleared and sampled separately from containment area/floor clearance activities? Please explain how this will be done."

Please see Section 7.2 paragraph 1.

3. It does not appear that Airtek revised the Waste Sampling and Management Plan to include EPA's comment #30 on the Revised Work Plan For Abatement and Demolition: "Revise this subsection to include a requirement to retain records of hazardous waste determinations and hazardous waste manifests for a period of at least three years." Revise the Waste Sampling and Management Plan to state this fact.

See Section 8.4 paragraph 2 of Work Plan and Section 12 of Waste Plan

Section 3.5, USEPA Notification

4. The reference to the USEPA notification is actually NESHAP not AHERA. Please revise this section accordingly.

Done.

5. Add the following language to this section "...that greater than 100 kg of Hazardous Waste is generated in any one month from this site..."

Done

Section 7.1, Part I - Exterior Cleaning:

NYC-WTC_000134342

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6. Bullet item #3: This section states that only one drum of water (i.e., the first) will be TCLP sampled for RCRA characteristics. Since more than one drum of waste water may be generated, Airtek should develop a sampling scheme that is representative of the total volume of waste water that may be generated.

Please see Section 7.1 Bullet Item #3

Section 7.2, Second Paragraph:

7. Describe "accessible" with regard to measures to be taken to reach interstitial areas. Describe anticipated inaccessible areas.

Please see Section 7.2 paragraph 2.

Section 7.4, Structural Framing/Masonry Façade

8. Change "an" to "and" in the third to last line.

Done.

Section 8.2, Last Paragraph, Last Sentence:

9. Change the reference to "Part II - Environmental Community Air Monitoring Plan During the Abatement and Demolition of 133-135 Greenwich Street and 21-23 Thames Street" for where one can find the procedures for visible emissions to be consistent with the current name of the Air Plan.

Done.

Section 8.4, Waste Management – Conventional Demolition:

10. This section states that "Transportation and Disposal will be as noted above." However Airtek's response to EPA comment #33 states that it is located in Part IV. Revise this sentence to reference where the transport and disposal information can be found.

Please see Section 8.4 Paragraph 2.

NYC-WTC_000134343

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Comments on

Part II
Environmental Community Air Monitoring Plan
During the Abatement and Demolition of
133-135 Greenwich and 21-23 Thames Street,
Re-submitted August 11, 2005

GENERAL COMMENTS:

1. The pages of the environmental air monitoring plan still need to be numbered and the Table of Contents should reference the page that a specific section can be found.

Done.

2. Airtek still needs to provide a complete Quality Assurance Project Plan (QAPP) that provides details on Quality Assurance/Quality Control (QA/QC) for all sampling and analysis activities to be conducted, not just the air sampling, during the abatement and demolition of the buildings.

Please see Revised QAPP in Part II, Attachment D of the submittal.

SPECIFIC COMMENTS:

Subsection 1.4 Environmental Sampling and Analytical Methodologies

3. Change "or" to "for" in the 5th line after, "...24-hour work period, except..."

Done

Subsection 3.2 Community Air Monitoring

4. The Environmental Community Air Monitoring Plan does not include the figure showing the anticipated locations of the air monitoring stations in Attachment A as stated in the plan. Include this figure.

Figure has been added based on site walkthrough w/EPA.

5. The second paragraph only discusses locating air monitors at two locations: the roof of the school auditorium on Cedar Street and the sidewalk bridge on Thames Street. However, the Response to Comments states the following: "The locations include the roof of the school auditorium on Cedar Street, the top of the sidewalk bridge on Thames Street east of the site, and across Thames Street at ground level at the Greenwich Street intersection." Please clarify and revise the Environmental Community Air Monitoring Plan based on the site visit conducted between EPA and Airtek on September 7, 2005. The original June 2005 submission noted that an air monitoring station would be located

NYC-WTC_000134344

NYC 9/11 Public Portal Document

at ground level and EPA requested that this station be moved further west to be located in front of 21-23 Thames Street. Now Airtek is proposing to locate this station on the sidewalk bridge. Based on the September 7, 2005 site walk, this third monitoring location may be located on the sidewalk bridge through the Abatement Phase and for only a portion of the Demolition Phase. Once the demolition of the 21-23 Thames Street reaches the third level (i.e., parallel to the street bridge), the monitoring station located on top of the sidewalk bridge will need to be brought down to street level in front of 21-23 Thames Street. EPA believes it would be beneficial for Airtek to relocate the street bridge monitoring station during appropriate times when no work is being performed at the buildings.

Agreed. Please see Section 3.2 paragraph 2.

Subsection 3.3 Abatement Work Air Monitoring

6. Need to add "Phase" after "Abatement" for the reference to Table 3 in the second paragraph.

Done.

Table 1 - Community Air Monitoring

7. Footnote 2: Remove the second "below" at the end of the footnote.

Done.

Table 1 - Community Air Monitoring - Notes on Community Air Monitoring Table - Dust

8. During the 4 Albany demolition, we found poor correlation between Met One 9012 results and the $PM_{2.5}$ TEOM. The Met One E-BAM (with a heated inlet to address condensible emissions) was found to correlate well with the TEOM and was utilized for continuous $PM_{2.5}$ monitoring in place of the Met One 9012. The Met One 9012 was used for PM_{10} sampling only. We do not believe the Met One 9012 is appropriate for $PM_{2.5}$ monitoring. The Met-One E-BAM, R&P TEOM, or Met-One BAM 1020 would be acceptable alternatives. Revise this section and Table 1 to specify which of the three aforementioned instruments will now be used.

The section states that the Met One E-BAM will be used. The BAM 1020 will be used for data comparison. Table 1 and notes have been edited.

9. Since Airtek indicates in its response to EPA comment # 34 that the parameters specified in Table 1 will be sampled during both the abatement and demolition phase, the last two sentences of this paragraph need to be revised to indicate that the equipment will be operated for at least one week before the Abatement Phase and that the results will be

NYC-WTC_000134345

NYC 9/11 Public Portal Document

submitted prior to the commencement of the Abatement Phase as opposed to the demolition phase.

Corrected as noted.

Notes on Community Air Monitoring Table – Organic Compounds (Dioxin/PCBs/PAHs)

10. Bullet item #1: Airtek may use the two weeks of organic background data collected at 130 Liberty Street for its project as opposed to gathering it for the full week of its background study.

Thank you.

11. Re-write the first sentence of bullet item #2 to state: "Organic samples will be collected at each community monitoring location once a week on a different day of the work week during the Abatement Phase and Demolition Phase, until all days of the work week are used and then the same schedule will be repeated until project completion."

Edited as Noted.

Table 2- Data Reference Levels for Community Monitoring

12. The footnote added to Table 2 to the column titled "EPA Site Specific Trigger Levels" and designated as note 2 incorrectly states, "A 4-hour value." Revise Note 2 to state, "A 24-hour value".

Edited as Noted.

13. Note 3: Need to add "for chromium VI" after "USEPA Site Specific Trigger Level" in the last line of note 3. Need to add "(0.6 ug/m^3)" after chromium VI in the second to last line of note 3.

Edited as noted.

Table 3 – Abatement Phase Work Area Monitoring

14. Airtek indicates in its response to EPA comment #47 that a reference to blanks has been added to Table 1 which applies to both phases. No such reference has been incorporated into Table 1. Revise the table to include the reference.

Please see reference to blanks in last row of Table 1.

NYC-WTC_000134346

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Environmental Community Air Monitoring Plan and Quality Assurance Project Plan (QAPP)

15. The QAPP appears to utilize the same sampling and analytical methodologies as the QAPP for air monitoring at the 130 Liberty Street Deconstruction Plan. Consequently, it is recommended that as much as possible of the technical and substantive material from the 130 Liberty Street QAPP be incorporated into Airtek's QAPP as well, ensuring that the quality of the work done for these demolitions will be appropriately usable for the intended purpose for these projects.

The monitoring program is designed to be consistent with the neighboring 130 Liberty Street monitoring program, and to the extent possible utilizes protocols developed for that project.

16. There are a few items that need to be addressed specifically. The following brief comments should be used as a guide for the improvement of the QAPP and the underlying monitoring work. They are tied, as appropriate, to the sections in the QAPP, since the pages were not numbered.

Section Comment

Att C Cover Page. A distribution list is needed, covering those who will receive copies of the final version of the QAPP and copies of any revisions and/or addenda, etc. EPA and the participating contractors should be included on that list.

Distribution list format created. To be completed when contractor list is complete.

C3.3 The specific regulations, etc. should be cited, at a minimum.

Reference to 40 CFR parts 50 and 53 has been added.

If the contractor has developed detailed Standard Operating Procedures and/or field checklists, they should be cited and attached.

SOPs, field forms, and check lists will be drafted following final selection of monitoring equipment and contract laboratories.

Records of traceability, certification, etc. should all be checked and maintained, along with criteria for the various calibrations, audits, etc.

This has been added to the QAPP.

C3.4 Data requirements. The 75% requirement, probably taken from the EPA national monitoring network guidance, is not appropriate for a project such as this. The

NYC-WTC_000134347

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recovery should be much higher, approaching 100%. Provisions for backup instruments, staff, and supplies should be included in the QAPP to ensure this is achieved.

Reference to the percent requirement ahs been removed and instead a statement has been added noting that backup instruments, field staff, and supplies will be maintained throughout the monitoring duration to ensure continuous operation of monitoring stations and high data recovery.

Measures of Accuracy, Precision, etc. What are listed are not measures, but are activities. That is fine, but the criteria for each of these quality control (QC) indicators need to be specified.

A table of QC indicators has been added for PM10 and PM2.5 measurements.

While "examples" of the QC "measures" may be helpful, it is essential that the contractor has the complete list clearly documented, ensuring that the appropriate control limits are attained consistently.

A table of QC indicators has been added for PM10 and PM2.5 measurements.

C3.5 Again, it is beneficial to see "some" of the measures that will be taken to ensure the quality of the data, but it is essential that the contractor document "all" of the measures that will be taken, and the schedules, limits, and/or ranges for each.

A table of QC indicators has been added for PM10 and PM2.5 measurements.

C4.0 The detection limits and reporting (or quantitation) limits need to be specified.

Table A-3 has been added which provides detection limits.

A provision is needed for changes resulting from the data validation/usability process.

New Sections 7.0 ASSESSMENT AND OVERSIGHT, 8.0 DATA VALIDATION AND USABILITY and 9.0 EXCEEDANCE NOTIFICATION have been added.

The parameters described in these lists need to be modified for the PM and Asbestos samples.

No inconsistencies noted by our review, but we are willing to cooperate with any further requests for adjustments.

C4.1, 5.0, 5.1

NYC-WTC_000134348

NYC 9/11 Public Portal Document

It would be very unusual for the contractor's QA Officer to perform data validation, as stated in C4.1. That is usually performed by the laboratory or a third party. Section 5.1 appears to say that the Lab's QA Officer would do data validation, although the validation described there is not complete. It is a "non-conformance" review as stated in 5.1, covering many important areas, but seeming to ignore important areas like problems that the analyst encounters, or, more likely, detection, identification, and quantitation issues. These need to be included, along with how all of this will be covered by data qualification designations, probably via qualification codes. Then, this section also needs to include a sub-section describing the process that will be followed for determining the usability of any data that are flagged during data validation. Finally, a section is needed describing in detail the process that will be followed for notification when any exceedances are found.

QA Officer will review laboratory validation reports. New Sections 7.0 ASSESSMENT AND OVERSIGHT, 8.0 DATA VALIDATION AND USABILITY and 9.0 EXCEEDANCE NOTIFICATION have been added.

C5.3 The frequency of such audits should be identified.

C6.0 This section also needs to include the process that will be followed when the potential need arises to modify a specified procedure, indicating who needs to be notified, who is authorized to make and approve a corrective action, and how that will be distributed to all who need to know it, and to those who had approved the previous procedure.

New Sections 7.0 ASSESSMENT AND OVERSIGHT, 8.0 DATA VALIDATION AND USABILITY and 9.0 EXCEEDANCE NOTIFICATION have been added.

NYC-WTC_000134349

NYC 9/11 Public Portal Document

Comments on

Part III
Health and Safety Plan
for 133-135 Greenwich/21-23 Thames Street
Abatement Phase Decontamination Project
Re-submitted August 11, 2005

General Comment:

1. Airtek states in its response to EPA comment #1 that the documents have been edited for consistency with regard to the terminology being used for the phases. However, the HASP still discusses a "Phase I" in numerous sections when it appears that Airtek has taken the approach to breakdown the project into an Abatement Phase and a Demolition Phase. Change "Phase I" to "Abatement Phase" in the HASP and any of the other submittals with regards to this project.

Done.

Section 1.0: Introduction

Page 4, Section 1.0, Second Paragraph

2. The Introduction Section now discusses five activities to be conducted as part of the Abatement Phase of the Demolition Project, but still does not mention what activities will be conducted as part of the Demolition Phase. The **Demolition Phase activities** still need to be summarized in the Introduction Section.

Demolition Phase task categories have been added to the Introduction, and to Table 2.1.

Page 4, Section 1.0, Third Paragraph

3. The HASP still indicates that activities to be undertaken as part of the Conventional Demolition Phase Deconstruction activities will be addressed in a separate HASP. When does Airtek plan to submit the separate HASP? Again, this separate HASP should be incorporated into the final submission to the regulators pertaining to this demolition project prior to the commencement of any work at the site.

HASP has been amended to reflect both abatement and demolition phases of this project.

Page 30, Section 2.11.1 Container Labels

4. This section now states that portable containers filled during a shift require no labeling until the shift is over (provided the container will be used on the next shift). Recommend that labels be used on all portable containers in order to avoid chemical materials being

NYC-WTC_000134350

NYC 9/11 Public Portal Document

improperly mixed with hazardous materials and/or substances and/or waste and/or with incompatible materials.

This section has been amended to require proper labeling on all containers.

Section 2.2.2: Task Hazard Analysis: Page 11:

5. This section now states, "the scope of work for the 133-135 Greenwich/21-23 Thames Street project consists of three general tasks". There are **other tasks to be performed as part of this project** besides the three tasks discussed in the Abatement Phase HASP (e.g., air monitoring during the demolition phase) that should be included in the HASP for the Demolition Phase that Airtek still has not submitted. The three tasks discussed in this HASP pertain to the Abatement Phase, and thus, this sentence should be re-written to indicate this fact.

Task Hazard Analysis has been revised to include demolition phase activities.

Section 2.5.3: Level B PPE: Page 21:

6. Airtek's response to EPA comment #16 states that no **concrete chute** will be used. However, reference is still made to the installation of a cement chute. Revise this section to remove the reference to a cement chute.

Reference removed.

Page 29, Section 2.10; Page 29, Section 2.10.2; & Page 32, Section 2.12:

7. Airtek's response to EPA comment #18 indicates that "HASP AM" had been changed to "CSO". However, three sections still discuss a "HASP AM". The role of the "HASP AM" has not been described in the HASP. Revise the HASP to define what this acronym stands for and to describe his/her role or change to "CSO" as was done in Section 2.2.4.

Changed to CSO.

Section 2.3, Page 19 & Section 2.7, Page 24:

8. These sections still discuss torching operations even though Airtek's response to EPA comment # 20 indicates that torching will not be conducted. If torching will not be conducted, remove any reference to **torching operations** in the HASP.

References removed.

Section 2.6: Safety Equipment: Page 22:

9. The HASP indicates that the communication and alarm system will be located in the contamination reduction zone (CRZ). Where in the CRZ will this system be located?

NYC-WTC_000134351

NYC 9/11 Public Portal Document

How will individuals stationed in the Support Zone access the communication and alarm system in case of an emergency if they are in Level D PPE?

This section has been edited to remove reference to communication and alarm system.

Section 2.10.1: Emergency Response Training: Page 29: 1st Paragraph

10. Airtek's response to EPA comment #25 states that the Emergency Action Plan is referenced in Section 2 of the HASP. However, it still does not appear that Section 2 includes the following items: emergency site operations shut down procedures, procedures for the response to fires, the location and the figure of the emergency meeting and/or "lay down" location(s), a discussion of what the site alarm system and the evacuation signals and alarms will entail, and the procedures to be taken for a fire.

New sections 2.14, 2.15 and 2.16 have been added to address these comments.

Section 2.12: Accident Prevention & Investigation: Page 31:

11. This section discusses some procedures for "minor accidents" such as a "small fire". What will be the procedures with regards to a fire that is not deemed "small"? At what point, and who is responsible for, notifying emergency responders (e.g., the fire department) of a fire, small or large?

New sections 2.14, 2.15 and 2.16 have been added to address these comments.

NYC-WTC_000134352

NYC 9/11 Public Portal Document

Comments on

Part IV
Waste Sampling and Management Plan
for the Abatement and Demolition of
133-135 Greenwich Street and 21-23 Thames Street
Dated August 11, 2005

General Comments

1. The Table of Contents should reference the page that a specific section can be found.

Done.

2. Remove statements as to Airtek's assumptions of expected negative sampling results in Sections 3.2, 3.3, 4.2, and 4.4. The actual analytical sampling results for all of the building components will determine the conclusions.

Text has been edited to reflect results. No assumptions were made based on this data. It was used to be indicative of conditions for project pre-planning.

Section 1.3, Page 3, 3rd sentence:

3. Include the word "under" after "project will occur."

Done.

Section 2.0, Page 4, Bullet Item 2.1:

4. Remove "Regulated".

Done.

Section 2.0, Page 4, Bullet Item 2.3:

5. No list of the current inventory of materials to be removed from the buildings has been provided. Consequently, if any of the following items are contained within the building, or on the roofs of the buildings, these items should be added to the list of materials in this section: mercury-containing electrical switches, mercury thermostats, lead-based painted components, used oil, fuel, and batteries. Additionally, if any of the aforementioned waste streams pertain to the building, the characterization, management, storage, transport, and disposal of these waste streams should be incorporated into the Waste Sampling and Management Plan.

A building re-inspection was conducted on 9/15/2005. The inventory list is included a Attachment B to this Part.

NYC-WTC_000134353

NYC 9/11 Public Portal Document

6. This section mentions "bagged accumulated waste". Section 6.3.4 states that miscellaneous bagged accumulated waste are primarily associated with occupancy by transient (squatting) occupants and are primarily clothing and used food containers. The Waste Sampling and Management Plan does not discuss the pre-transient occupants and commercial/retail lessees items that were in the building prior to September 11, 2001 (e.g., clothes, furniture, etc.). This section needs to be revised to include these items on the list of building components. Additionally, the characterization, management, storage, transport, and disposal of these waste streams should be incorporated into the Waste Sampling and Management Plan.

As noted above, a building re-inspection was conducted on 9/15/2005 particular attention was paid to the items referenced in this comment. Commercial/Residential lessee items have been added to Section2.3.

7. Add "and potting material" after "light ballasts."

Done.

Section 3.0, Page 5:

8. The syntax does not seem appropriate in the first sentence of this section. Nonetheless, the concentration of the contaminants of potential concern (COPCs) found within settled dust varied throughout the buildings impacted by the collapse of the World Trade Center buildings. It is not appropriate to imply that the RCRA characteristics for the buildings to be demolished as part of this project will be similar to those found in other buildings since the level of contaminants to be found in the dust, and by extension, materials impacted by the dust may not be homogeneous throughout the buildings. Recommend removing this sentence.

Removed. See Section 3.0 for replacement statement.

Section 3.1, Page 5:

9. This section (Corollary Data) discusses TRC sampling results for the 130 Liberty Street building. We do not believe Airtek can assume that the data from another building correlates to what will be found at the buildings to be demolished as part of this project for the reasons explained above. Recommend removing this section.

"Corollary" has been edited to read "illustrative," and this data was never intended to substitute waste stream sampling.

Section 3.2, Page 5:

10. We understand that Airtek has received the analytical results from the sample taken within the kitchen. Therefore, this section should be re-written to discuss the sample

NYC-WTC_000134354

NYC 9/11 Public Portal Document

results as opposed to implying the conclusions of the analytical results. Additionally, the analytical results should be included as an attachment to the Waste Sampling and Management Plan and referenced in the Table of Contents.

Done.

11. This section seems to imply that there is only dust to be found in the kitchen. Dust may also be potentially found in the interstitial spaces, and dust has been seen on windows, window sills, mattresses, the floor, etc. Additionally, since there is a large amount of debris currently covering the floors, in particular at 21-23 Thames Street, it is unknown how much dust may be within that debris and the floor beneath that debris. This section should be re-written to note that fact.

The section has been edited for clarity.

Section 3.3, Page 6:

12. It is not appropriate to make preliminary conclusions for the buildings being demolished as part of this project based on sampling results taken at 130 Liberty Street and 4 Albany Street for the reasons explained above. Further, it is not appropriate to make assumptions about all of the building components in both buildings based on one analytical sampling result taken from one room of one floor of the buildings. This section should be re-written to address these concerns.

Section 3.3 has been removed.

13. May need to reference Section 2.3 as well in the first sentence if the occupants and commercial/retail lessees items that were in the building prior to September 11, 2001 (e.g., clothes, furniture, etc.) are to be specified under Section 2.3 in the revised Waste Sampling and Management Plan.

Section 3.3 has been removed. Section 2.3 has been edited as noted.

14. Need to add "at a minimum" to the end of the first sentence.

Section 3.3 has been removed.

15. The last sentence should be re-written to state the following: "Waste generated during the project will be characterized, handled, transported and disposed according to applicable regulations and waste characterization conducted by the Environmental Consultant."

Section 3.3 has been removed.

Section 4.1, Page 6:

NYC-WTC_000134355

NYC 9/11 Public Portal Document

16. Remove "Regulated" before "Contaminants".

Done.

17. The first sentence of the second paragraph states that the dust at the site has been sampled and tested for RCRA characteristics. If Airtek is referring to the one composite sample taken from the kitchen, then it is not appropriate for Airtek to state that the waste characterization for the building components at the site has been completed since assumptions about all of the building components in both buildings should not be made based on one analytical sampling result taken from one room of one floor of the buildings. This section should be re-written to address these concerns.

Paragraph 2 has been re-written.

18. The last sentence of the second paragraph states that sample results are documented in Attachment I. There is no Attachment I included with the Waste Sampling and Management Plan and no sampling results provided. Include this information.

Attachment 1 has been added.

Section 4.2, Page 6:

19. The first paragraph states that, "dust sampling for hazardous waste characteristics has been performed in advance of sampling of materials impacted by dust." We are only aware of two samples taken by Airtek: one composite sample taken of dust in the kitchen and a second sample taken of the caulking. If additional analytical sampling results have been generated, those sample results should be included as an attachment to the Waste Sampling and Management Plan and referenced in the Table of Contents. If analytical sampling results have been generated, why does Airtek makes assumptions about these results. The actual analytical sampling results should be discussed if the samples have already been collected and analyzed, as stated in this section.

Section 4.2 has been edited.

20. Define "random confirmatory sampling" with respect to sampling representability in the first paragraph. Airtek should provide specific details on the locations of the various samples, and the rationale for their locations. Simply stating that "random confirmatory sampling" will be conducted is a broad generalization that does not provide any indication on the number of samples that will be gathered from each building component per floor and/or waste storage area, and the locations at which the samples will be collected.

Term has been edited to read "confirmatory sampling." Sampling details are specified in Section 6.0.

21. Airtek states in the first paragraph that if "the dust is not a characteristic hazardous waste, and then by extension, any non-hazardous materials potentially impacted by dust (i.e., the Deconstruction Waste listed in subsection 2.2 above) would also not be

NYC-WTC_000134356

NYC 9/11 Public Portal Document

hazardous." That statement may only be accurate if Airtek is proposing a sampling scheme that will be representative of all areas in the building that have been impacted by WTC dust because the level of contaminants to be found in the dust, and by extension, materials impacted by the dust may not be homogeneous throughout the buildings. Further, building components specified in Section 2.3 may also be potentially impacted by dust. Revise this section to address these concerns.

Section has been edited. Representative sampling will be conducted. Sampling is detailed in section 6.0.

Section 4.2, Page 7, Last Paragraph:

22. Airtek makes reference to an "Asbestos and COPC Abatement Plan of the Work Plan". Where exactly is this located since none of the four parts of Airtek's submittal for the Abatement and Demolition project are titled this?

Section has been edited to read, "Work Plan."

23. Airtek discusses the waste characterization strategy for non-porous deconstruction waste. Airtek should discuss the waste characterization strategy for porous deconstruction waste.

Statement has been added on porous deconstruction waste. Sampling details are in section 6.0.

Section 4.3, Page 7, Second Paragraph:

24. This section does not discuss the waste characterization strategy for the miscellaneous materials defined under Section 2.3. Add language to this section to address the waste characterization strategy.

"Miscellaneous Materials" have been further defined based on the 9-15-05 re-inspection. Waste characterization sampling is discussed in section 6.0.

25. Replace "land banned" with "restricted from land disposal pursuant to 40 C.F.R. Part 268."

Edited as noted.

Section 4.4, Page 7, First Paragraph:

26. Airtek states in the first paragraph that if "the dust is not a characteristic hazardous waste, and then by extension, any non-hazardous materials potentially impacted by dust (i.e., the Structure & Façade of the building would also not be hazardous." That statement may only be accurate if Airtek is proposing a sampling scheme that will be representative of all areas in the building that have been impacted by WTC dust because

NYC-WTC_000134357

NYC 9/11 Public Portal Document

the level of contaminants to be found in the dust, and by extension, materials impacted by the dust may not be homogeneous throughout the buildings. Revise this section to address this concern.

Section has been revised.

27. Define "random confirmatory sampling" with respect to sampling representability in the first paragraph. Airtek should provide specific details on the locations of the various samples, and the rationale for their locations. Simply stating that "random confirmatory sampling" will be conducted is a broad generalization that does not provide any indication on the number of samples that will be gathered from each building component per floor and/or waste storage area, and the locations at which the samples will be collected.

This is detailed in section 6.0.

Section 4.4, Page 8:

28. The third paragraph states that on-site storage of deconstruction waste for waste classification will not be required and that removed materials will be placed into applicable disposal containers/vehicles for off-site shipment. This paragraph appears to contradict Section 8 (Storage) which states that "if necessary, an enclosed, locked area will be maintained on site for the storage of waste material prior to off-site disposal." The Waste Sampling and Management Plan needs to clarify whether on-site storage will or will not be occurring, what will be stored in the storage area, the timing and location of sampling of waste streams prior to final off-site disposal, etc. The plan needs to be revised to make these matters clear. Further, a figure showing the location of the waste storage area and how waste streams will be segregated and stored in the waste storage area needs to be clearly defined on the figure.

No acceptable space exists at the site for on-site storage of hazardous waste. Section 8 has been edited.

29. The fourth paragraph needs to be revised to read, "If greater than 100 kg/month of hazardous waste is generated during the deconstruction process..."

Edited as noted.

Section 5.2, Page 9:

30. Re-write this paragraph, to be consistent with the current version of SW-846, to state the following: "The characteristic of corrosivity carries the RCRA waste code of D002, and may be analyzed using Method 9045D or 9040C as set forth in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. SW-846 method 9040 C is for aqueous wastes and multiphase waste where the aqueous phase constitutes at least 20% of the total volume of the waste; 9045D is for soils and waste samples where the waste may be solids, sludges, or non-aqueous liquids. The aqueous

NYC-WTC_000134358

NYC 9/11 Public Portal Document

phase must be less than 20% of the total volume of the waste. National Association of Corrosion Engineers (NACE) Standard TM-01-69 as standardized in SW-846 shall be utilized to evaluate corrosion rate if the suspected corrosive hazardous waste is a liquid."

Edited as noted.

Section 5.4, Page 10:

31. The last paragraph on this page states that painted surfaces to be sampled will be sampled for TCLP lead, cadmium, and chromium. Since painted surfaces may contain other metal components such as arsenic and mercury, and Airtek will be running a TCLP analysis, Airtek needs to include all of the metals in its TCLP analysis to determine if the painted surfaces would cause the material to be classified as a hazardous waste. Revise this section and any other sections of the four parts submitted as part of this abatement and demolition project that mention the sampling of painted surfaces, accordingly.

Section Edited as noted.

Section 6.1, Page 11:

32. It may be inappropriate to state that the WTC dust has been sampled to the degree possible. Dust may also be potentially found in the interstitial spaces, and dust has been seen on windows, window sills, mattresses, the floor, etc. Additionally, since there is a large amount of debris currently covering the floors, in particular at 21-23 Thames Street, it is unknown how much dust may be within that debris and the floor beneath that debris. This section should be re-written to note that fact and if additional sampling of dust is to be conducted, this section should provide specific details on the sampling scheme.

Section Edited.

Section 6.2, Page 11:

33. Discuss the representability of the proposed sampling number. See comment number 20 above. Further, please clarify if Airtek is proposing one composite sample per deconstruction material that will consists of five grab samples.

Section Edited. Airtek is proposing one composite sample per deconstruction material, per building, however site conditions may dictate that further sampling is advisable. The plan allows that the Environmental Consultant may make this determination. Where possible, each floor of the buildings will be represented in the sampling. A minimum of 5 grab samples will be composited for each material.

Section 6.0, Page 11:

34. Title of this section should be "Sampling Frequencies and Disposal" since disposal options are also discussed in this section.

NYC-WTC_000134359

NYC 9/11 Public Portal Document

Edited as noted.

Section 6.3.1, Page 11:

35. Add "and other PCB Wastes" after the title of this section.

Done.

36. If fluids potentially contaminated with PCBs are suspected at this project, a discussion on such a waste stream should be included in this section.

No electrical transformers or other fluid PCB sources are suspected to exist at the site. As with all waste, materials encountered that are not covered in this plan will be managed appropriately under the direction of the Environmental Consultant. This is discussed in Section 6.3.

Section 6.3.3, Page 13:

37. Change "Material" to "Refrigerant-containing equipment" in the third sentence of the first paragraph.

Edited as noted.

38. Add the following to the end of the section: "After removal of refrigerant and otherwise rendering the appliance safe, recycle or dispose of the appliances as scrap metal or as municipal solid waste, respectively."

Added as noted.

Section 6.3.4, Page 13:

39. Airtek states that studies were conducted by the building owner's team which indicated that the miscellaneous bagged accumulated waste were primarily clothing and used food containers. What did this "study" actually entail? Were all miscellaneous bagged accumulated waste visually inspected? If not, it is recommended that 100% of the miscellaneous bagged accumulated waste should be visually inspected.

All bags were inspected during the 9-15-05 re-inspection. No materials were noted that fall outside the categories of "Commercial/Residential Lessee Items," or "Transient Residential Items."

40. Airtek states that miscellaneous bagged accumulated waste will be disposed of as asbestos-containing wastes. It may be inappropriate to claim that miscellaneous bagged accumulated waste will be disposed of as asbestos waste. This waste stream may also

NYC-WTC_000134360

NYC 9/11 Public Portal Document

contain WTC dust, and other miscellaneous materials and/or deconstruction waste, and it should be sampled and further characterized for waste classification related to other identified contaminants, including the COPCs. A determination needs to be made about whether bagged accumulated waste must be handled as a hazardous waste in addition to being handled as an asbestos waste. Airtek should propose a detailed sampling scheme for the miscellaneous bagged accumulated waste and discuss the representability of the proposed sampling number in the sampling scheme.

The sampling procedure proposed for deconstruction wastes (Section 6.2) will be applied to bagged wastes. Section has been edited.

41. Add the words "at a minimum" at the end of the last sentence of this section.

Added as noted.

Section 6.3.5, Page 13:

42. This section states that "no fuel storage is known to exist at the site." Airtek should clarify how heat was provided to the tenants of the commercial/retail spaces and the residential spaces and the fuel source(s) for the restaurants. If oil or propane tanks were used and are still within the buildings, the characterization, management, storage, transport, and disposal of these waste streams should be incorporated into the Waste Sampling and Management Plan.

Section edited.

Section 6.3.6, Page 13:

43. Based on previous discussions with NYSDEC on the issue of final disposal options for fire extinguishers, NYSDEC has stated that fire extinguishers would not be considered C&D debris. Therefore, strike-out the first sentence of this section.

Done.

44. Re-word the beginning of the second sentence to state, "In the case of both discharged and undischarged fire extinguishers, the manufacturer..."

Done.

45. Airtek should add the following language to this section: "Alternately, local fire department(s) may be contacted to determine if they would like to acquire the charged fire extinguishers in volunteer or community training exercises. If the above approaches prove impractical, fire extinguishers shall be depressurized in accordance with manufacture's recommendations and all regulatory requirements. Contained media shall be collect upon depressurization, characterized, and recycled or disposed, if and as

NYC-WTC_000134361

NYC 9/11 Public Portal Document

required. Empty extinguisher bodies shall be rendered inoperable by cutting in half or puncturing, then recycling as scrap metal or disposing as municipal solid waste."

Language added.

Section 6.4, Page 14:

46. Discuss representability of proposed sampling number. See comment numbers 26 and 27 above. Further, please clarify if Airtek is proposing one composite sample per structural and façade material that will consists of five grab samples.

One sample per material, per building at a minimum prior to the demolition phase. Environmental Consultant may determine more sampling is appropriate. Section revised.

Section 7.0, Page 14:

47. This section discusses what Airtek plans to do with non-porous deconstruction waste. The Waste Sampling and Management Plan does not discuss the approach to be taken for porous deconstruction waste. Include a section that discusses the handling, management, storage, disposal, and transport of this waste stream.

The entire Waste Sampling and Management plan discusses porous deconstruction waste, which is nearly all of the waste, and which is being handled under negative pressure containment during the abatement phase. Section 4 discusses waste characterization, section 5 discusses analytical methodologies, and section 6 discusses sample frequency. Non-porous waste has been broken out into a separate section due to the possibility of its being cleaned and disposed/recycled. No such possibility exists for porous wastes.

48. Add "(i.e., not recycled)" at the end of the first sentence of the first paragraph.

Added as noted.

49. This section indicates that painted non-porous deconstruction will be sampled and analyzed for TCLP lead, cadmium, and chromium. Since painted surfaces may contain other metal components such as arsenic and mercury, and Airtek will be running a TCLP analysis, Airtek needs to include all of the metals in its TCLP analysis to determine if the painted surfaces would cause the material to be classified as a hazardous waste. Revise this section to state that sampled will be analyzed for, and compared to, the TCLP metals.

Edited to include RCRA Metals.

50. Airtek states that if "results of the settled dust classification sampling indicate that the dust results exceed the regulatory threshold for one or more RCRA characteristics, the waste will be managed as both a RCRA waste of the appropriate waste code as well as

NYC-WTC_000134362

NYC 9/11 Public Portal Document

asbestos waste." Airtek does not propose to conduct any dust sampling of non-porous deconstruction waste for waste classification. Airtek should explain how it plans to determine the waste classification of this waste stream and discuss the representability of the proposed sampling number in this section.

Surface wipe sampling of non-porous unpainted materials will be conducted and submitted for TCLP metals analysis. See Revised Section 7.0.

51. Airtek does not discuss how cleaned, unpainted, non-porous deconstruction waste will be managed and disposed. Revise this section to address this concern.

Statement added.

Section 8, Page 14:

52. Airtek has not provided any design specifications for the "enclosed, locked area" for the storage of waste material nor the location of this storage area on-site. Airtek needs to provide this information to the regulatory agencies for their review and acceptance prior to beginning the project.

Waste storage, except for ACM storage permitted by NYC Title 15, will not be permitted on site. Section has been edited.

53. Add the following to the second to last sentence of this section: "...within the storage area, posted signs, labeled accumulation start dates, labeled description of the waste, aisle space, proper segregation of incompatible and or/ignitable waste, etc. will be inspected."

See response to comment #52.

Section 8.1, Page 15:

54. Airtek should add the following italicized wording to the first sentence of the first paragraph, "Hazardous waste will be placed in containers *made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored so that the ability of the container to contain the waste is not impaired* (e.g., USDOT..."

See response to comment #52.

55. The last sentence of the first paragraph should be revised to read, "Containers will be inspected at least weekly to identify any leaks, and/or deterioration caused by erosion or other factors, and to ensure containers are not over-packed."

See response to comment #52.

NYC-WTC_000134363

NYC 9/11 Public Portal Document

56. Airtek should add the following sentence to the end of the first paragraph, "While being accumulated on-site, each container shall be labeled or marked clearly with the words, "Hazardous Waste".

Added to Section 8.1.

57. Re-write the last paragraph as follows: "Hazardous waste may be accumulated in the waste storage area without a storage permit for a maximum of 90 days from the accumulation start date. If the generator status should change from large quantity generator to small quantity generator, then a maximum of 13,200 pounds of hazardous waste may be accumulated in the waste storage area without a storage permit for a maximum of 180 days from the accumulation start date."

See response to comment #52.

58. Airtek should add language on its requirements for handling incompatible waste, such as, but not limited to, indicating that hazardous waste will not be placed in an unwashed container that previously held an incompatible waste, indicating how a storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby will be separated from the other materials or protected from them by means of a dike, berm, wall, or other device. Revise the plan accordingly.

See section 8.1

59. Since Airtek has not provided any specifications for the waste storage area, it is unclear how and where ignitable or reactive waste will be stored within the storage area. Such waste must be located at least 15 meters (50 feet) from a facility's property line. Specifications on the waste storage area and the location of ignitable and/or reactive waste within the waste storage area will need to be identified and provided to the regulators for review.

See response to comment #52.

Section 10.0, Page 16:

60. Airtek states that the proposed abatement subcontractor's *Proposed Waste Removal and Transportation Procedures* are currently under review and that the approved procedures will be appended to this plan. Airtek should provide this information to the regulatory agencies for their review and acceptance prior to beginning the project.

The referenced language was included erroneously. ACM waste haulage and disposal information is included in the NYC DEP filings for the abatement phase. Other disposal information can only be generated once waste characterization is conducted, as facilities will change dependent on the classification of waste. Routing will be subject to LMCCC directives.

NYC-WTC_000134364

NYC 9/11 Public Portal Document

Section 11.0, Page 16:

61. The title for this section should read "Disposal Facilities."

Done.

Section 12, Page 16:

62. Add hazardous waste determination documents, including all analytical results.

Done.

Additional Comments:

63. Since water will need to be used during the wash-down of the exterior of the building, the Waste Sampling and Management Plan should describe how that water will be contained, characterized, stored, and disposed of depending on the sampling results. The Waste Sampling and Management Plan should be revised to incorporate specific details on the sampling scheme for the water to be used during the building wash-down or its use during any other aspects of this deconstruction project (e.g., any other exterior work, as an engineering control during abatement activities, etc.). Some of this information is noted in Part I - Revised Work Plan for Abatement and Demolition and should also be specified in the Waste Sampling and Management Plan.

See section 8.4.

64. The Waste Sampling and Management Plan should include details on what type of containers/tanks the washdown/wastewater will be stored and the location of these containers/tanks at the site. Details should be provided on the mechanism(s) to be used to transfer water into the storage containers/tanks.

See section 8.4.

65. If Airtek plans to use a water filtration system capable of filtering particles down to 5 microns prior to final disposal, Airtek should provide details on how it plans to manage, characterize, store, dispose, and transport of the spent filters. The same information should also be provided for the PPE.

See section 8.4.

NYC-WTC_000134365

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Attachment 4

CONTACTS/EMERGENCY TELEPHONE NUMBERS

PROJECT NAME: 133-135 GREENWICH/21-23 THAMES STREET DECONSTRUCTION PROJECT

THE FOLLOWING ARE THE TELEPHONE NUMBERS WHERE PROJECT PERSONNEL CAN BE REACHED AT ALL TIMES. IN ADDITION, THE EMERGENCY TELEPHONE NUMBERS OF OTHER VITAL AGENCIES ARE LISTED.

ENVIRONMENTAL CONSULTANT
AIRTEK CORPORATION (212)768-0516

PRINCIPAL:	Benn Lewis	MOBILE	(917) 295-0810
SENIOR PROJECT MANAGER:	Mike Porter	MOBILE	(917) 337-4325
ALT. PRINCIPAL:	Mike Zouak	MOBILE	(917) 495-9242
CIH (Health & Safety Officer):	Clifford Cooper	MOBILE	(914) 388-9796

ABATEMENT CONTRACTOR
HAZARDOUS ELIMINATION (631)752-2898

PRINCIPAL:	Don Gold	MOBILE	(516) 250-0174
SITE MANAGER:	Daniel Zelik	MOBILE	(516) 250-0176
CONTRACTOR SAFETY OFFICER (CSO):	Ernie Carranza	MOBILE	(516) 250-9671

DEMOLITION CONTRACTOR
BREEZE NATIONAL (718) 254-8070

PRINCIPAL:	Toby Romano	OFFICE	(718) 254-8070
CONTRACTOR SAFETY OFFICER:	Dyal Ramcharan	MOBILE	(917) 682-8947

STRUCTURAL ENGINEER
DESIMONE CONSULTING ENGINEERS

ENGINEER:	Boris Hayda	OFFICE	(212) 532-2211

LOCAL EMERGENCY TELEPHONE NUMBERS

FIRE	911				
AMBULANCE	911				
HOSPITAL	NYU Downtown Hospital	170 William St	911	OR	(212) 312-5000
POLICE	NYC Police Dept	2 Lafayette St	911	OR	(917) 454-1100

NYSDEC Spill Response	(800) 457-7362
Poison Control Center	(800) 962-1253
National Response Center	(800) 424-8802

NYC-WTC_000134366

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labeled description of the waste, aisle space, proper segregation of incompatible and or/ignitable waste, etc. will be inspected on a daily basis by the Environmental Consultant.

All containers on site will have proper labeling, which includes information such as waste type and accumulation date.

8.1 Hazardous Waste

Hazardous waste will be placed in containers made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored so that the ability of the container to contain the waste is not impaired (e.g., USDOT approved drums, bags, roll-off containers) and transferred to the waste storage area pending transport. While being accumulated on-site, each container shall be labeled or marked clearly with the words, "Hazardous Waste". Containers will be inspected to ensure containers are not over packed or leaking. Hazardous waste will not be placed in an unwashed container that previously held an incompatible waste. Any disposal container holding a hazardous waste that is incompatible with any waste or other materials contained nearby will be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

8.2 Universal Waste

Universal waste will be handled, packaged, and stored pending transport according to all regulations governing universal wastes. See 8.1 above.

7.2 Asbestos Waste

Waste containing asbestos will be wet down to prevent visible emissions of asbestos dust into the air. The asbestos waste will be sealed while wet in a leak-tight container. A supply of leak tight containers will be kept in the waste storage area to provide adequate repackaging if a break in the container should occur. Storage area shall be maintained under a negative pressure ventilation system. ACM packaging and waste decontamination procedures will be in accordance with Title 15 Chapter 1 of the Rules of the City of New York. Daily inspections of the waste storage area shall be required.

Storage of asbestos waste will not exceed 50 cubic yards. Authorization from the New York City Department of Sanitation (NYCDOS) and additional requirements, per code, will be required if accumulation of asbestos is anticipated to be greater than 50 cubic yards. Containers holding asbestos waste will be inspected daily to ensure no visible emissions of asbestos dust in the air or breaks in the container.

8.4 Exterior Wash Water

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Part III

Health and Safety Plan
for
133-135 Greenwich/21-23 Thames Street
Deconstruction/Demolition Project

Prepared for:

The Copper Group Inc.
666 5th Avenue, Suite 180
New York, NY 10103

Prepared by:

Airtek Environmental Corp.
39 West 38th Street
New York, NY 10018

June 13th, 2005
Comments: June 29, 2005
Re-submittal June 30, 2005
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Re-submittal August 11, 2005
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Re-submittal August 29, 2005

NYC 9/11 Public Portal Document

TABLE OF CONTENTS

1.0 INTRODUCTION **4**
1.1 BACKGROUND 4
1.1.1 Environmental Characterization *4*
1.2 SITE DESCRIPTION 5
1.3 PURPOSE 5
2.0 HEALTH AND SAFETY PROCEDURES **6**
2.1 PERSONNEL RESPONSIBILITIES 6
2.1.1 Contractor *8*
2.1.2 Contractor's Site Safety Officer (CSO) *8*
2.1.3 Owner's Environmental Consultant *9*
2.2 HEALTH AND SAFETY HAZARD ANALYSIS AND RISK ASSESSMENT 10
2.2.1 Preliminary Evaluation *10*
2.2.2 Task Hazard Analysis *10*
2.2.3 Physical Hazards *18*
2.2.4 Chemical Hazards *19*
2.2.4.1 Additional Identified Chemicals 19
2.2.5 Biological Hazards *20*
2.2.5.1 Insects 20
2.2.5.2 Rodents 20
2.2.5.3 Mold/Fungi 20
2.3 ENGINEERING CONTROLS 20
2.4 ADMINISTRATIVE CONTROLS AND WORK PRACTICES 21
2.5 PERSONAL PROTECTIVE EQUIPMENT (PPE) 21
2.5.1 Basic PPE Requirements *22*
2.5.2 Level C PPE *22*
2.5.3 Level B PPE *23*
2.5.4 Level A PPE *23*
2.6 SAFETY EQUIPMENT 24
2.6.1 Respiratory Protection Program *24*
2.6.1.1 Respirator Testing 25
2.6.1.2 Respirator Inspection, Sanitization, and Maintenance 25
2.6.2 Medical Response Equipment *26*
2.7 PERSONAL AIR MONITORING 26
2.8 SITE CONTROL 27
2.8.1 Work Zones *27*
2.8.2 Personnel and Equipment Decontamination *28*
2.8.2.1 Personnel Decontamination Procedure 28
2.8.2.2 Equipment Decontamination Procedure 29
2.8.3 Safety Meetings *29*
2.9 TRAINING PLAN 30
2.9.1 Health and Safety Awareness Training *30*
2.9.2 Asbestos Training *30*
2.9.3 HAZWOPER Training *30*
2.10 PERSONAL PROTECTIVE EQUIPMENT TRAINING 31

NYC-WTC_000134369

NYC 9/11 Public Portal Document

2.10.1 Emergency Response Training 31
2.10.2 Visitor Training 31
2.10.3 32
2.11 HAZARD COMMUNICATION 32
2.11.1 Container Labels 32
2.11.2 Material Safety Data Sheets (MSDSs) 33
2.12 ACCIDENT PREVENTION & INVESTIGATION 33
2.13 MEDICAL SURVEILLANCE PLAN 34
2.13.1 Respiratory Protection 34
2.13.2 Hearing Conservation 34
2.13.3 First Aid 35
2.13.4 Medical Emergency 35
2.13.5.1 Life-Threatening and/or Otherwise Serious Incident 35
2.13.5.2 Non-Life-Threatening Incident 35
2.13.6 Bloodborne Pathogens 36
3.0 DOCUMENTATION 38

LIST OF TABLES

TABLE 2-1 ACTIVITY HAZARD ANALYSIS
TABLE 2-2 OSHA PEL, ACTION LEVEL, AND TRIGGER LEVELS

LIST OF FIGURES

FIGURE 1-1 SITE LOCATION AND HOSPITAL DIRECTIONS MAP

LIST OF ATTACHMENTS

ATTACHMENT 1 - LIST OF ACRONYMS
ATTACHMENT 2 – ASBESTOS SURVEY
ATTACHMENT 3 – HASP ACKNOWLEDGEMENT FORM
ATTACHMENT 4 – CONTACTS/EMERGENCY TELEPHONE NUMBERS

NYC-WTC_000134370

NYC 9/11 Public Portal Document

1.0 INTRODUCTION

This Health and Safety Plan (HASP) presents the practices and procedures that the Contractor shall implement and enforce during the deconstruction and demolition of the buildings located at 133-135 Greenwich/21-23 Thames Street in New York City (the Buildings). This HASP will be applicable to all persons entering the Buildings and to all persons working in and around the Buildings. The deconstruction of the Buildings will occur in two phases:

The Abatement Phase of the Deconstruction Project will occur while the work area is placed under negative pressure containment and includes the following general categories: (a) the general area cleanup of WTC dust and debris, (b) removal and disposal of installed porous and certain non-porous building materials and components, (c) cleaning and salvage of certain installed non-porous building equipment and components, (d) removal of building materials containing asbestos which were present in the Building prior to September 11, 2001 (referred to herein as "ACBM"), primarily within the Building interior, (e) packaging of asbestos and other regulated waste at generation points, movement of containers to the decontamination unit and movement of decontaminated containers to waste loading.

The Deconstruction Phase of the Deconstruction Project will occur following the Abatement Phase and removal all porous and contaminated materials, and will follow conventional demolition procedures. Deconstruction activities include the following general categories: (a) floor-by-floor deconstruction and removal of the remaining "clean" building components including exterior masonry walls, sub-flooring and structural wood frame components, and (b) general site work, including fencing, erecting scaffolding/hoists, paving, if any, and drainage. Summaries of the potential physical, chemical and biological hazards that may be encountered during these tasks and the associated hazard control methods are presented in Table 2-1.

The clean-up and abatement will be conducted so that the Building can be safely deconstructed in compliance with applicable law to allow for redevelopment of the site.

The Contractor shall be supported on this project by the Owner's Environmental Consultant who will provide environmental testing, air sampling and asbestos project monitoring and serve the function of Environmental Consultant/Project Monitor.

1.1 BACKGROUND

The events of September 11, 2001, which caused the destruction of the WTC Towers generated massive debris and dust. While not physically damaged, some of this WTC dust entered into the 133-135 Greenwich/21-23 Thames Street Buildings. The Buildings had been partially reoccupied after September 11, 2001 following clearance of debris and unspecified cleaning to permit re-occupancy.

1.1.1 Environmental Characterization

NYC-WTC_000134371

NYC 9/11 Public Portal Document

The Owner contracted with Airtek Environmental Corp. to conduct Asbestos Surveys and General Building Characterization for the 133-135 Greenwich/21-23 Thames Street buildings. Due to the proximity of these buildings to the WTC, and the extensive environmental tests carried out at the adjacent 130 Liberty Street (Deutsche Bank) Building, it is assumed for the purpose of this HASP that similar potentially contaminated WTC dust is present at this site. The settled dust in and on the Building may contain elevated levels of five COPCs designated by the United States Environmental Protection Agency (USEPA) as being associated with the WTC dust (asbestos, dioxin, lead, polycyclic aromatic hydrocarbons [PAHs], and crystalline silica) as well as other contaminants suspected of being present in the Buildings including polychlorinated biphenyls (PCBs) and heavy metals (antimony, barium, beryllium, cadmium, chromium, copper, manganese, mercury, nickel and zinc).

The Owner has retained Airtek Environmental Corp. to conduct Environmental Investigations of the buildings for additional unidentified asbestos containing building materials (ACBM). These environmental reports are included as Attachment 2 to this HASP.

The requirements outlined within this Health and Safety Plan are based upon the data collected to date. As additional information is obtained during the course of the Abatement and Demolition activities, these requirements will be amended if necessary to protect workers or the public.

1.2 SITE DESCRIPTION

The Property is currently developed for a combination of commercial and multi-family residential use. The Property includes a vacant two-story commercial building that was constructed on the northwestern portion of the Property circa 1980. The building was most recently occupied by a pizza shop, a coffee shop, a Japanese restaurant, an Indian restaurant, a shoe repair shop, and second floor professional (doctors') offices. The Property also includes a vacant five-story building that was constructed on the southeastern portion of the Property prior to 1894. This building includes two ground floor tenant spaces most recently occupied by a sandwich shop, a Western Union office, and approximately eight residential units.

The Property is located within the urban commercial downtown Financial District of Manhattan, New York City, immediately south of the former World Trade Center site and adjacent to the vacant Deutsche Bank Building. The Property is bounded to the west by Greenwich Street, to the north by a four story mixed-use (commercial/residential) building, to the east by Finance and Economics High School, and to the south by Thames Street.

1.3 PURPOSE

This document presents the safety procedures and practices to be followed during all Abatement Phase site activities to ensure the safe completion of tasks. The procedures and practices herein are designed to prevent occupational injuries and exposures to chemical, physical and biological hazards to workers at the Site. The procedures are presented to ensure compliance with all applicable government agencies and regulations, including, but not limited to requirements and protocols established by: the Occupational Safety and Health Administration (OSHA); the

NYC-WTC_000134372

NYC 9/11 Public Portal Document

National Institute of Occupational Safety and Health (NIOSH); the United States Environmental Protection Agency (USEPA); the New York State Department of Conservation (NYSDEC); the State of New York, New York State Department of Labor (NYSDOL); the New York City Department of Environmental Protection (NYCDEP); and the City of New York.

This document incorporates relevant health and safety guidance developed for the Lower Manhattan Development Corporation's 130 Liberty Street building Deconstruct Project as described in their May 2005 Health and Safety Plan for that project.

Compliance with this HASP is required due to hazards associated with the Buildings' current condition and anticipated Abatement Phase activities. This HASP is based upon current knowledge of conditions at the Site and will be updated as new information (including personal and environmental sampling and field observations) becomes available and/or conditions change within the Building.

2.0 HEALTH AND SAFETY PROCEDURES

This section identifies the principal hazards associated with the tasks to be performed during the cleaning, asbestos and COPC abatement, and interior component removal and conventional demolition activities, and establishes standard safety and health procedures for the Contractor, the Subcontractors and anyone who comes onto the site. The content of this HASP is designed to anticipate, identify, evaluate, and control safety and health hazards for the work activities to be performed during this project. All on-site work activities by any Subcontractors and their designees shall be performed in accordance with this HASP, and in accordance with applicable federal, state, and local regulations.

The levels of personal protection and the procedures specified in this Plan are based on the best information available from validated reference sources (i.e., OSHA, NIOSH) and current site data. Therefore, the guidelines presented in this HASP represent the minimum health and safety requirements to be observed by all on-site personnel engaged in this project. Discovery of currently unknown site conditions or changes in the scope of work will necessitate the reassessment of the protection levels, controls, and procedures stated herein. All amendments to this HASP must be made in consultation with the Regulatory Agencies, and must have prior written approval by the Environmental Consultant's Certified Industrial Hygienist (CIH) and the Contractor's Project Manager.

2.1 PERSONNEL RESPONSIBILITIES

The Contractor, Subcontractor and other personnel on-site shall review and understand this document prior to working on-site.

All personnel shall:

NYC-WTC_000134373

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1. Participate in initial site orientation/training as described in Section 2.9.1, and daily safety meetings, and shall provide any required documentation, medical clearance, fit test, asbestos certification, etc. prior to starting work on the site. Documentation requirements are determined by activities to be performed.

2. Sign the HASP Acknowledgement Form and other required documents after orientation to indicate that they participated in orientation and understood the information presented in orientation.

3. Follow the designated safety and health procedures; be alert to the hazards associated with working on the site, and exercise reasonable caution at all times.

4. Any questions or concerns about this HASP shall be directed to the on-site Contractor Project Manager and/or the Site Safety Officer.

5. Take all reasonable precautions to prevent injury to themselves and to their fellow employees, and being alert to potentially harmful situations.

6. Obey all applicable laws and regulations relating to health and safety.

7. Ensure that activities do not impact the neighboring community.

8. Perform only those tasks that they have been trained to complete and can do safely.

9. Notify their supervisor of any special medical conditions (i.e., allergies, contact lenses, diabetes) that may affect their ability to perform certain tasks.

10. Notify their supervisor of any prescription and/or non-prescription medication that they may be taking that might cause drowsiness, anxiety, or other unfavorable side affects.

11. Learn and comply with Site security requirements.

12. Comply with the Site's prohibition on drug and alcohol use, smoking, horseplay, and restricted eating/drinking areas.

13. Practice good housekeeping by keeping the work areas neat, clean and orderly.

14. Immediately reporting all injuries, incidents and near-misses to the designated supervisor.

15. Properly use PPE specified by the contractor and this HASP, based on the results of air monitoring.

16. Properly maintain their designated PPE per manufacturers' recommendations.

17. Comply with the HASP and all health and safety recommendations and precautions.

NYC-WTC_000134374

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18. Notify their supervisor of any Site conditions or concerns which are not addressed by the protective measures specified in this HASP, or which are addressed but the employee does not understand the protective requirements specified herein.

2.1.1 Contractor

1. The Contractor Project Manager shall have overall responsibility for ensuring health and safety protection on the site and for ensuring that all elements of the HASP are implemented during all phases of the daily on-site activities of this project.

2. The Contractor Project Manager shall oversee the Contractor's responsibility to monitor for visible emissions.

3. The Contractor shall notify the Environmental Consultant's CIH of any need to change or amend any aspect of this HASP and/or seek input with regard to interpretations of the HASP in concert with the designated Safety Officers of the Subcontractors.

4. The Contractor shall consult with and coordinate any modifications to the HASP with the Environmental Consultant's CIH; will recommend corrective actions for identified deficiencies; and will oversee the implementation of any corrective actions.

5. The Contractor shall coordinate the health and safety activities of all the Contractor and Subcontractor personnel to ensure the requirements of the HASP are followed and shall communicate with all parties when changes occur on-site or when conditions impacting the site occur concerning the response actions to be taken.

6. The Contractor shall direct the implementation and enforcement of this HASP and consult with the Subcontractors regarding the health and safety procedures and practices to be used on this project.

7. The Contractor shall enforce the requirements of this HASP with respect to health and safety, air monitoring requirements and waste management requirements.

8. The Contractor shall perform on-site training and the day-to-day on-site implementation and enforcement of the HASP.

9. The Contractor shall ensure site compliance with federal/state/local regulations and all aspects of this HASP including, but not limited to; Performing activity hazard analyses, Providing guidance concerning the use of PPE, Ensuring site control, Developing standard operating procedures to minimize hazards such as the use of engineering controls.

10. The Contractor shall provide all necessary PPE and have "extras" for authorized visitors and agency representatives.

2.1.2 Contractor's Site Safety Officer (CSO)

NYC-WTC_000134375

NYC 9/11 Public Portal Document

1. The Contractor shall have a Site Safety Manager (CSO) on-site during the project on a full time basis for the entire duration of on-site field activities. If operations are performed during more than one work shift per day, a qualified Contractor Site Manager shall be present for each shift.

2. The CSO shall have authority to stop any and all work activities if unacceptable health and safety conditions exist or if actions occur that may affect safety and health conditions for personnel or the environment. The authority to stop work shall include an automatic work stoppage if visible emissions leave the Site perimeter.

3. The CSO shall act as the primary contact during any on-site emergency situation.

4. The CSO shall conduct accident investigations and prepare accident reports, prepare and maintain records of corrective actions taken on-site and document health findings into a project-dedicated logbook

5. Additionally, the CSO is responsible for logging all site visitors, checking for current medical and fit test certifications and applicable federal/state/local asbestos training for all those entering containment. The CSO does not provide specialized training for specific cleaning, abatement or interior component removal portions of the work. This shall be provided by each Subcontractor for its personnel. This does not excuse the CSO, however, from responsibility to see that this is done.

6. The CSO shall document each orientation performed and requires that each person receiving the orientation complete, sign and date the HASP acknowledgement.

7. The CSO shall review the following documentation from each Subcontractor to complete the administrative record for the site: name of Subcontractor's safety officer; list of emergency contact phone numbers; confirmation of current worker fit tests, medical clearances and asbestos training & certification for each Subcontractor employee; and Subcontractor HASP, including Hazard Communication Program, Fall Protection Program, Respiratory Protection Program, personal air monitoring program.

8. The CSO shall review MSDSs of products proposed for use at the site. If any product is hazardous, the CSO shall investigate potential alternate products that are non-hazardous.

2.1.3 Owner's Environmental Consultant

The Owner's Environmental Consultant shall provide a Certified Industrial Hygienist (CIH) and field industrial hygiene personnel during the project fieldwork. The CIH shall manage developing and modifying this HASP, directing field industrial hygiene personnel responsible for the execution and monitoring of any health and safety activities at the site, review of monitoring data generated during the site work, walk-through safety and health spot field inspections, and advising the Owner and Contractor of unacceptable conditions identified that may affect safety and health for personnel or the environment. The responsibilities of the Owner's Environmental

NYC-WTC_000134376

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Consultant shall include monitoring for visible emissions as detailed in the Environmental Monitoring Specification.

2.2 HEALTH AND SAFETY HAZARD ANALYSIS AND RISK ASSESSMENT

2.2.1 Preliminary Evaluation

The work to be conducted at 133-135 Greenwich/21-23 Thames Street comprises construction activities and, as such, falls under Title 29 of the Code of Federal Regulations, Part 1926 (29 CFR 1926), the OSHA Construction Standard.

An evaluation of the anticipated general work activities was performed (discussed later in this section) that included a Hazard Analysis for each general task/activity to identify associated hazardous conditions, appropriate employee protection methods and PPE requirements. The evaluation of potential site conditions and activity hazards is an ongoing process and shall continue throughout the duration of the project.

Potential hazards during the Abatement Phase effort include the following:

- Physical – Excessive noise; inclement weather; heat stress; cold stress; manual lifting; slips and falls; structural integrity; working at elevation; electrical safety; heavy equipment operation; and other general construction hazards.

- Chemical – Asbestos, silica, PAHs, dioxins, man-made vitreous fibers (MMVF), antimony, cadmium, nickel, lead, barium, chromium, zinc, manganese, copper, beryllium, PCBs, mercury, copper, zinc, cristobalite and quartz.

- Biological – Mold; rodents; insects.

- Radiological – None anticipated.

2.2.2 Task Hazard Analysis

The scope of work for the 133-135 Greenwich/21-23 Thames Street project consists of five (5) general tasks, as follows:

Task 1: Environmental Consultant monitoring including work area air sampling during preparation decontamination and demolition activities; clearance air sampling upon completion of asbestos and COPC abatement and removal activities; and waste characterization sampling.

Task 2: Maintain temporary services including water, fire protection and GFCI protected electrical.

Task 3: Preparation for and general area cleanup of WTC dust and debris, which as stated by the regulators must be treated as asbestos (at a minimum) and which may contain other COPCs;

NYC-WTC_000134377

NYC 9/11 Public Portal Document

removal and disposal of installed porous and certain nonporous building materials and components contaminated by settled dust and debris; cleaning and salvage of certain installed non-porous building equipment and components contaminated by settled dust and debris; removal of ACBM from the Building; packaging and loading of regulated waste as identified during the implementation of the Waste Sampling and Management Plan.

Task 4: Deconstruction activities including the cleaning of the building exterior (i.e. building washdown), floor-by-floor deconstruction and removal of the remaining "clean" building components including exterior brick wall, flooring and structural wood frame components.

Task 5: General site work, including fencing, erecting scaffolding/hoists, paving, if any, and drainage. Summaries of the potential physical, chemical and biological hazards that may be encountered during these tasks and the associated hazard control methods are presented in Table 2-1.

NYC-WTC_000134378

NYC 9/11 Public Portal Document

Table 2-1

Task 1: Environmental Consultant Air Monitoring and Waste Characterization

Equipment Required: Air sampling equipment, Waste Characterization e.g. (scoops, bowls, scale, safety blades, sample containers), PPE

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
1	Mobilization (Transporting employees, materials and equipment to site)	Level D	Use of vehicles	Vehicle and driving safety	Contractor Specific
2	Unloading equipment on the ground level	Level D	Lifting	Proper lifting techniques	Contractor Specific
			Site security	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Insects	Biological hazard monitoring	
3	Waste characterization sampling	Level C***	Chemical COPC	Hazard Communication PPE	Contractor Specific
			Heat stress	Heat monitoring	Contractor Specific
			Cold stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
4	Area air sampling during abatement activities	Level C***	Asbestos	Avoidance/monitoring	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Heat stress	Heat monitoring	Contractor Specific
			Cold stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Mold	Avoidance	Contractor Specific
			Asbestos	Avoidance/Monitoring	Contractor Specific
5	Clearance air sampling	Level C***	Chemical COPC	Hazard Communication PPE	Contractor Specific
			Heat stress	Heat monitoring	Contractor Specific
			Cold stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Asbestos	Avoidance/monitoring	Contractor Specific

NYC-WTC_000134379

NYC 9/11 Public Portal Document

Task 2: Maintaining Temporary Services

Equipment required: Hand and power tools, ladders, PPE

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
1	Mobilization (Transporting employees, materials and equipment to site)	Level D	Vehicle Incidents	Vehicle and driving safety	Motor Vehicles and Equipment Program
2	Unloading equipment on the ground level	Level D	Lifting	Proper lifting procedures	
			Heat Stress	Heat monitoring	
			Cold Stress	Cold monitoring	
			Slip/trip/fall	Housekeeping	Housekeeping Program
			Trespassers	Site security	
			Pinch points	Materials handling	
			Hand tools	Proper use techniques	
3	Maintain basic utilities to include: – Temporary GFCI protected electrical	Level C ***	Chemical COPC plus plumbing chemicals	Hazard Communication PPE	Hazard Communication Program, 29 CFR 1910.120 (a) (i)
			Slip/trip/fall	Housekeeping	Housekeeping Program
			Pinch points	Materials handling	
			Work from elevation	Fall protection. Proper ladder use.	Elevated work - Fall Protection Program
			Hand tools	Proper use techniques	
			Hot Work	Hot Work permitting Fire prevention	Welding, Cutting and Burning - Hot-Work Procedure
			Wet feet	Avoidance/techniques	
			Electrical safety	Electrical safety - LO/TO	Electric -Temporary
			Stored hazardous energy	LO/TO program	Lockout/Tagout Procedures
			Elevator malfunction	Maintain certification and operate according to manufacturers instructions	

* As described in Section 9.2

NYC-WTC_000134380

NYC 9/11 Public Portal Document

Task 3: General area cleanup of WTC dust and debris, as stated by the regulators must be treated as asbestos (at a minimum) and which may contain other COPCs; removal and disposal of installed porous and certain non-porous building materials and components contaminated by settled dust and debris; cleaning and salvage of certain installed non-porous building equipment and components contaminated by settled dust and debris; removal of ACBM within the Building; packaging of regulated waste as identified during the implementation of the Waste Sampling and Management Plan found within Section 1 of the Deconstruction Plan at generation points movement of containers to decontamination unit and movement of decontaminated containers to waste loading area; and cleaning of limited, designated exterior surfaces to facilitate the erection of the man-hoist and the crane.

Equipment required: Heavy cleaning equipment, HEPA vacuums, hand/power tools, ladders, scaffolding, lifting equipment, PPE

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
1	Mobilization (Transporting employees, materials and equipment to site)	Level D	Vehicle use	Vehicle and driving safety	Contractor Specific
2	Unloading equipment on the ground level	Level D	Lifting	Proper lifting techniques	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
3	Constructing containment areas and placing air handling units on the floors	Level C***	Chemical COPC plus adhesives	Hazard Communication PPE	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Lifting	Proper lifting techniques	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Work from elevation	Fall protection	Contractor Specific
			Use of scaffolds	Scaffold safety	Contractor Specific
			Hand and power tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
5	Removal and disposal of installed porous and certain non-porous building materials and components contaminated by settled dust and debris	Level C***	COPC, silica and lead	Follow procedures	Contractor Specific
			Lifting	Proper lifting techniques	
			Noise	Hearing protection	
			Heat stress	Heat monitoring	
			Cold stress	Cold monitoring	
			Slip/trip/fall	Housekeeping	
			Structural damage	Structural integrity / PE inspection	
			Demolition	Follow demolition plan	General Safety Regulations
			Pinch points	Materials handling	
			Work at elevation	Fall protection	Fall Protection Plan
			Hand tools	Proper use techniques	
			Inadequate lighting	Illumination	
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure
6	Cleaning and salvage of certain installed non-porous building equipment and components contaminated by settled dust and debris	Level C ***	COPC, silica and lead	Follow procedures	Contractor Specific
			Lifting	Proper lifting techniques	
			Noise	Hearing protection	
			Heat stress	Heat monitoring	
			Cold stress	Cold monitoring	
			Slip/trip/fall	Housekeeping	
			Structural damage	Structural integrity / PE inspection	
			Demolition	Follow demolition plan	General Safety Regulations
			Pinch points	Materials handling	
			Work at elevation	Fall protection	Fall Protection Plan
			Hand tools	Proper use techniques	
			Inadequate lighting	Illumination	
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure
			Torch Cutting	Generation of lead or other toxics, Fire	Compliance with OSHA Lead and cadmium in Construction Standard, Hot work procedures, Cutting procedures

NYC-WTC_000134381

NYC 9/11 Public Portal Document

Task 3: Cont'd:

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
7	Removal of building materials contaminated with asbestos and ACBM.	Level C***	Chemical COPC	Hazard Communication PPE	Contractor Specific
			Working from Elevations	Fall Protection	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			High pressure water	Pressurized systems	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Asbestos	Avoidance/monitoring/PPE	Contractor Specific
			Lead	Avoidance/monitoring/PPE	Contractor Specific
			PCBs	Avoidance/monitoring/PPE	Contractor Specific
			Mercury	Avoidance/monitoring/PPE	Contractor Specific
			Other chemicals	Avoidance/monitoring/PPE	Contractor Specific
			Mold	Avoidance/monitoring/PPE	
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure
8	Packaging of regulated waste as identified during the implementation of the Waste Management and Sampling Plan found within Section 1 of the Deconstruction Plan at generation points, movement of containers to decontamination unit and movement of decontaminated containers to waste loading area.	Level C***	Chemical COPC	Hazard Communication PPE	Contractor Specific
			Working from Elevations	Fall Protection	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			High pressure water	Pressurized systems	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Asbestos	Avoidance/monitoring/PPE	Contractor Specific
			Lead	Avoidance/monitoring/PPE	Contractor Specific
			PCBs	Avoidance/monitoring/PPE	Contractor Specific
			Mercury	Avoidance/monitoring/PPE	Contractor Specific
			Other chemicals	Avoidance/monitoring/PPE	Contractor Specific
			Mold	Avoidance/monitoring/PPE	
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure

NYC-WTC_000134382

NYC 9/11 Public Portal Document

Task 4: Demolition Phase Deconstruction activities including the systematic floor-by-floor deconstruction and removal of the remaining "clean" building components including exterior brick wall, and structural wook components.

Equipment required: Heavy equipment, HEPA vacuums, hand/power tools, ladders, scaffolding, lifting equipment, PPE

Subtask #	Activities	PPE Requirements*	Hazards	Preventative Mechanism	Procedure**
1	Mobilization (Transporting employees, materials and equipment to site)	Level D	Vehicle use	Vehicle and driving safety	Contractor Specific
2	Unloading equipment on the ground level	Level D	Lifting	Proper lifting techniques	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Trespassers	Site security	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
3	Constructing abatement areas for rooftop transite and caulking and aluminum column covers and fascia	Level C***			
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Slip/trip/fall	Housekeeping	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Lifting	Proper lifting techniques	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Work from elevation	Fall protection	Contractor Specific
			Use of scaffolds	Scaffold safety	Contractor Specific
			Hand and power tools	Proper use techniques	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
4	Removal of building materials contaminated with ACBM.	Level C***	Working from Elevations	Fall Protection	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			High pressure water	Pressurized systems	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Asbestos	Avoidance/monitoring/PPE	Contractor Specific
			Lead	Avoidance/monitoring/PPE	Contractor Specific
			Other chemicals	Avoidance/monitoring/PPE	Contractor Specific
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure
5	Packaging of asbestos waste at generation points, movement of containers to decontamination unit and movement of decontaminated containers to waste loading area.	Level C***	Working from Elevations	Fall Protection	Contractor Specific
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			High pressure water	Pressurized systems	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Use of ladders	Ladder safety	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Inadequate lighting	Illumination	Contractor Specific
			Asbestos	Avoidance/monitoring/PPE	Contractor Specific
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure
6	Deconstruction of Concrete slabs	Level D	Demolition	Follow demolition plan	Safety Regulations
			Heat Stress	Heat monitoring	Contractor Specific
			Cold Stress	Cold monitoring	Contractor Specific
			Electrical sources	Electrical safety - LO/TO	Contractor Specific
			Pinch points	Materials handling	Contractor Specific
			Hand tools	Proper use techniques	Contractor Specific
			Noise	Hearing protection	Contractor Specific
			Construction Equip	Demolition Safety	Contractor Specific
			Silica	Avoidance/monitoring/PPE	Contractor Specific
			Cranes/Lifting Equipment	Crane/lifting safety	Crane, Hoist, and Rigging Standard Operating Procedure

NYC-WTC_000134383

NYC 9/11 Public Portal Document

Task 5: Site Work (Fencing, Back filling, Paving, and Drainage)

Equipment required: Trackloaders, Skidsteer Loaders, Small Tilt Sladers, Vibratory Rollers, Roller Compactor Truck

Paving: Asphalt Paving Equipment, Smooth Barrel Roller, Forklift, Crane, Area lift

Subtask #	Activities	PPE Requirements	Hazards	Preventative Mechanism	Procedure
1	Installation of Site fences	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below
2	Back filling	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below
3	Paving	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below
4	Drainage	Level D	*Moving Equipment *Open excavation * Evacuation of excavations before backfilling	* Hand signals * Barricades * Safety watch	See Items 1-5 Below

General Precautions- Site specific precautions to be determined as the detailed scope and schedule are developed.
Care must be taken to reduce the risk of worker injury and property damage during backfilling or paving operations.

1. No backfill shall commence until all workers are clear of the working areas.
2. The operators of any machines or vehicles being used in backfilling operations shall keep other employees in sight at all times.
3. The operators of any truck employed in backfilling operations shall ensure that all workers are in the clear before approaching the ditch or dumping the load.
4. No equipment shall back closer than 1 meter to the edge of any excavation and this set-back shall be increased commensurately with the depth of the excavation unless trenching sleds or other retention devices are employed.
5. No equipment shall dump material closer than 1 meter to the edge of an excavation.

NYC-WTC_000134384

NYC 9/11 Public Portal Document

If site conditions change during the course of the deconstruction project, the Environmental Consultant will evaluate the new conditions and discuss appropriate amendments to the HASP with the Contractor. The proposed amendments shall be reviewed and approved by the Environmental Consultant's CIH and the Contractor Project Manager.

2.2.3 Physical Hazards

While the buildings at 133-135 Greenwich/21-23 Thames Street suffered no significant damage from the WTC Collapse, numerous physically hazardous conditions exist related to the deteriorated, run-down condition of much of the space in these buildings. These hazards include damaged electrical sources and components, falling hazards due to openings in the floors, or the possibility of materials falling from overhead. The primary physical hazards that may be encountered during this project are related to the Abatement Phase activities and include: heavy equipment operation; excessive noise; excessive heat or cold; inclement weather; manual lifting/handling of heavy objects; poor housekeeping; rough terrain; compromised structural integrity; traffic; cranes, hoists and other lifting equipment;, aerial lifts and manlifts; working at elevation; use of scaffolding; hazardous materials handling; potential utility and electrical sources; use of hand and power tools; slips and falls; etc.

Due to the existence of these hazards, the Contractor shall ensure that all site employees receive hazard awareness training. Additionally, the Contractor shall insure that Subcontractors perform the following operations under the direct on-site supervision of OSHA Competent Persons (provided by the Subcontractors for each task as necessary):

- General Construction (29 CFR 1926.20)
- Unsanitary Conditions (29 CFR 1926.27)
- Rigging (29 CFR 1926.251)
- Scaffolding (29 CFR 1926.450)
- Ladders (29 CFR 1926.1053)
- Personal Fall Arrest Systems (29 CFR 1926.500 and .502)
- Ear Protection (29 CFR 1926.101)
- Cranes and Derricks (29 CFR 1926.550)
- Materials Hoists, Personnel Hoists and Elevators (29 CFR 1926.552)
- Demolition (29 CFR 1926.850)
- Welding/Cutting on surfaces covered by protective coatings (29 CFR 1926.354)
- Excavation (29 CFR 1926.650)
- Lead (29CFR 1926.62)
- Asbestos (29 CFR 1926.1101)
- Cadmium 1926.1127
- Powered Platforms for Building Maintenance, 29 CFR 1910.66
- Hazardous Waste Operations and Emergency Response, 29 CFR 1926.65

NYC-WTC_000134385

NYC 9/11 Public Portal Document

2.2.4 Chemical Hazards

A chemical hazard that may be encountered during this project is asbestos. Based upon the most recent pre-demolition asbestos survey conducted by Airtek environmental Corp., approximately 50 linear feet of friable, and 400 square feet of non-friable asbestos-containing material has been identified. In addition, WTC dust with assumed varying concentrations of COPCs, has been identified during visual inspection of the site. Therefore, the Contractor shall ensure that all site employees receive the required training concerning asbestos as well as all applicable Hazard Communication training.

In addition, personnel who have the potential to disturb ACBM shall be trained concerning the procedures to be used and requirements for notifications in accordance with federal, state and local regulations. Personnel who handle ACBM on this job shall have the required documented training and certificates. Each employee involved in abatement activities must have completed City of New York asbestos training, shall be a certified asbestos worker and/or supervisor by the City of New York, and shall be certified asbestos handler and/or supervisor by the New York State Department of Labor. Additionally, personnel who will conduct cleaning and abatement activities must have additionally received the required 40-hour training as outlined by 29 CFR 1910.120(a) (i) (HAZWOPER requirement) and appropriate annual refresher training as required. This HAZWOPER training requirement may be removed, should sampling indicate training requirement downgrade is appropriate. Training, medical and license documentation for each Subcontractor employee shall be verified by the CSO prior to start of work by the Subcontractor.

2.2.4.1 Additional Identified Chemicals

Other chemicals identified as potential contaminants that may be encountered during the initial site cleaning activities are PAHs, dioxins, antimony, cadmium, nickel, barium, chromium, lead, zinc, manganese, copper, beryllium, PCBs, mercury, copper, zinc, cristobalite and quartz.

Environmental sampling in the neighboring buildings has verified the presence of these chemical contaminants in WTC dust in concentrations exceeding USEPA's Residential Cleanup Criteria.

Additional chemical hazards generated from deconstruction activities would be lead, cadmium, and chromium from coated surfaces. Subcontractors shall perform personnel monitoring for all COPCs as required by OSHA. In addition, Subcontractors must provide applicable OSHA training for the identified hazards. Documentation of this training must be provided by the Subcontractor.

Precautions to be taken during the removal of miscellaneous hazardous materials (bulbs, ballasts, batteries, mercury-containing thermostats, etc) are found in Table 2-1, Task 3. Respiratory protection, as identified within Table 2-1, represents the minimum level of protection for all identified tasks.

There may also be hazardous chemicals brought on-site and used in the deconstruction. The requirements of the OSHA Hazard Communications Standard (29 CFR 1910.1200) shall apply.

NYC-WTC_000134386

NYC 9/11 Public Portal Document

Section 2.8 provides information concerning the management of hazardous chemicals on-site and the site Hazard Communication Program.

2.2.5 Biological Hazards

Biological concerns in the work area are primarily, insects, rodents, and mold/fungi.

2.2.5.1 Insects

The presence of insects shall be addressed by personnel as the insects are encountered. When a stinging or poisonous insect, such as a bee or spider, is identified, personnel should exercise caution to avoid being bitten or stung for example by using tools to move material. In the event that a person is stung or bitten, the incident shall be reported to the Site Manager for the Subcontractor who shall report the incident to the CSO. The Site Manager for the Subcontractor shall initiate actions to manage and address the bite or sting. Personnel who are allergic to insect bites and stings should identify their allergy to their employer.

2.2.5.2 Rodents

In the event that rodents or animal pests are identified or observed on-site, the Subcontractor Manager should report the incident to the Contractor CSO. The Contractor shall be responsible for evaluating the condition and implementing steps to eliminate rodents on the site.

2.2.5.3 Mold/Fungi

The initial building walk-though by Airtek environmental identified mold contaminated building materials/components within the Building. The identification of additional mold/fungi on-site will be made based on visual inspections of building materials. When mold/fungi are identified, the removal of impacted materials shall be addressed concurrently with Asbestos Abatement Activities. Removal and handling measures shall be consistent with the NYC Department of Health and Mental Hygiene "Guidelines on Assessment and Remediation of Fungi in Indoor Environments."

2.3 ENGINEERING CONTROLS

Engineering controls will be used as primary protective mechanisms to protect the safety and health of all employees whenever technically feasible, and prior to the implementation of Administrative Controls and/or personal protective equipment. Each Subcontractor shall be responsible for the provision and implementation of the following:

- Construction/demolition dust suppression materials and equipment to include:
    - HEPA-filtered air filtration devices to reduce area dust levels.
    - Vacuum cleaners equipped with HEPA filters.

NYC-WTC_000134387

NYC 9/11 Public Portal Document

- Fume eductors attached to HEPA filters for all hand-powered tools.

- Removal of all lead-based painted materials (if necessary), and adequate exhaust ventilation provided.

- Barricades, railings or other devices to prevent employee exposure to fall hazards or moving equipment per 29 CFR 1926.

- Other task-specific engineering controls as recommended by OSHA guidelines or as recommended by the Contractor or the CIH.

2.4 ADMINISTRATIVE CONTROLS AND WORK PRACTICES

Each Subcontractor shall utilize administrative controls and work practices as a secondary means of ensuring worker health and safety when engineering controls do not provide sufficient protection or are technically infeasible. Each Subcontractor shall be responsible for the provision and/or implementation of the following:

Ensuring all employees are enrolled in a medical monitoring program as required by OSHA, including medical monitoring for blood lead levels as outlined in Section 2.13 of this HASP.

Ensuring all employees have current fit-test and training certifications.

Implementing work practices that avoid generating dust whenever possible.

Requiring that all employees implement decontamination procedures, including washing hands, face, hair and neck upon leaving the work area and before eating, drinking or smoking.

Removing lead based paint or coatings before cutting, grinding or other activities that would be expected to disturb the lead-based materials, or complying with the provisions of 29 CFR 1926.62.

Use of the Buddy System will be required for all employees working within the Exclusion Zone, as defined in Section 2.8.1 below, or while performing non-standard tasks as designated by the Subcontractor's Safety Officer.

2.5 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal protective equipment will be used to provide adequate personnel protection only after feasible engineering and administrative control options have been exhausted. All personnel engaged in the project work activities will use the appropriate level of protection as required by the activity to be performed and are presented in the "Task Hazard Analysis" presented in Table 2-1.

NYC-WTC_000134388

NYC 9/11 Public Portal Document

All PPE requirements for site activities are based upon available historical site characterization data and knowledge of the anticipated hazards. Changes in levels of PPE and changes in the PPE requirements for specific areas shall be made based upon the results of monitoring, visual observations and the nature of the site operations, including the presence of or potential for previously unidentified chemicals or conditions.

In accordance with OSHA 29 CFR 1910.132-138 and 1926.28 (Personal Protective Equipment), all PPE shall be provided, used, and maintained in a sanitary and reliable condition. All PPE shall be of construction, design, and material to protect employees against known or anticipated hazards. PPE shall be selected that properly and appropriately fits the employee. PPE shall be worn in compliance with PPE requirements of NYC DEP and OSHA.

2.5.1 Basic PPE Requirements

Each employee will wear a hard hat and safety glasses or other eye protection at all times while onsite, except for designated "safe" areas. Eye protection includes safety glasses, safety goggles, welding goggles, welding hoods, or full-face respirators. Prescription or non-prescription eyeglasses and sunglasses are not approved for eye protection. All acceptable eye protection must include side shields and must be ANSI-approved.

Unless in designated safe locations, all personnel shall have with them and/or wear the following PPE when entering the site:

Work clothes without loose sleeves and cuffs

American National Standards Institute (ANSI) - approved safety boots

ANSI - approved safety glasses

ANSI - approved hard hat with bill facing forward

Work gloves (either leather or cotton)

Hearing protection (as necessary)

The above listed PPE ensemble, defined as Level D, shall be worn during all outdoor site activities and inside of the building after clearance testing has been completed.

2.5.2 Level C PPE

Level C PPE shall be worn when working inside of the building (with the exception of previously cleaned areas such portions of the basement occupied by field offices) during all Abatement Phase activities, except for concrete jack hammering in enclosures . Level C PPE consists of:

Full-face powered air-purifying respirator (PAPR) with HEPA filter approved by the National Institute for Occupational Safety and Health (NIOSH)/Mine Safety and Health Administration

NYC-WTC_000134389

NYC 9/11 Public Portal Document

(MSHA)1. Half-face air-purifying respirators (APR) may be used during work preparation activities.

Gloves - nitrile inner; chemical resistant outer (nitrile or neoprene)

ANSI-approved safety boots

ANSI–approved Eye protection – safety glasses or goggles

ANSI-approved Hard hat with bill facing forward

Tyvek coveralls with head cover (Two layers Tyvek or equivalent)

Water-resistant overboots which are treaded to provide slip protection

Hearing protection (as necessary)

2.5.3 Level B PPE

Level B PPE may be required during jack hammering concrete unless engineering controls are instituted incorporating local exhaust ventilation at the point of dust generation until personal air monitoring confirms that the level of silica is below the OSHA action level. Level B PPE consists of:

Self-Contained Breathing Apparatus (SCBA) or combination airline/SCBA approved by the National Institute for Occupational Safety and Health (NIOSH)/Mine Safety and Health Administration (MSHA).

Gloves - nitrile inner; chemical resistant outer (nitrile or neoprene)

ANSI-approved safety boots

ANSI–approved Eye protection – safety glasses or goggles

ANSI-approved Hard hat with bill facing forward

Tyvek coveralls with head cover (Two layers Tyvek or equivalent)

Water-resistant overboots which are treaded to provide slip protection

NOTE: If air sampling data proves that the level of asbestos and COPCs are consistently below the action level, respiratory protection may be downgraded to an appropriate level of protection.

Hearing protection (as necessary)

2.5.4 Level A PPE

Use of this type of PPE is not anticipated at this site. Should work conditions and personnel sampling exceed action levels for a PPE upgrade to Level A, operations shall cease in that area

NYC-WTC_000134390

NYC 9/11 Public Portal Document

until site conditions can be re-evaluated by the Contractor and the Environmental Consultant's CIH.

2.6 SAFETY EQUIPMENT

The following emergency equipment will be located in the CRZ: fire extinguishers, spill control equipment, , and decontamination equipment.

The requirements for PPE on this job may be refined and changed to address the conditions identified when tasks are performed. The Subcontractors will work with the Contractor to ensure the proper PPE is maintained and available on-site at all times, and that personnel are trained to use the PPE and understand the procedures and practices for the safe and effective use of PPE. The Subcontractors will provide the required PPE for their employees.

The PPE requirements presented in this HASP are the minimally acceptable for the specified activity. Subcontractors can make individual decisions to upgrade the equipment requirements for each PPE level to ensure the hazards presented by an activity are controlled and exposure is minimized. Engineering and administrative controls will be identified and implemented for each activity prior to use of PPE.

2.6.1 Respiratory Protection Program

Respiratory protection is required whenever work is performed inside the building to protect the workers from exposures to contaminants, primarily asbestos, which may be present. Half-face negative pressure air purify respiration particulate filters that are HEPA or P100 shall be required during work preparation activities (i.e. installation of isolation barriers) and PAPR will be used during other Abatement Phase activities, unless Level B is required. Environmental Consultant's CIH or qualified subcontractor IH personnel will evaluate the need for additional protection such as adding organic vapor cartridges based on their respiratory protection programs and chemicals they may be using. The following practices will be conveyed to all employees and enforced by the Contractor and the CSO respect to respiratory equipment for this project:

1. Subcontractors whose personnel wear respiratory protection shall have a written respiratory protection program that meets the requirements of the OSHA Standard (29 CFR 1910.134) and has been developed by a Competent Person as defined by OSHA.

2. Personnel who may need to wear respiratory protection shall be fit-testing, medically qualified and trained, as required by the Standard, to use respiratory protection. The Subcontractor shall identify personnel who may use respiratory protection and documentation of fit-testing, medical qualification and training shall be provided for each person who may need to wear respiratory protection on the job.

3. The Subcontractor shall review with the Contractor CSO the procedures for the handling, storage and maintenance of respiratory protective equipment to be used on-site, including the process for reporting and repairing or replacing defective equipment and the locations where respiratory equipment will be stored.

NYC-WTC_000134391

NYC 9/11 Public Portal Document

4. Subcontractors will provide employees with adequate respiratory protection as required by each task.

5. A respirator of lesser protection factor than is required for the task/activity may not be used.

6. Each employee will change his/her respirator filter at the end of each work shift. The Subcontractor will provide an adequate supply of approved filters in accordance with the manufacturers specifications for daily replacement for each employee's respirator.

7. Each Subcontractor will ensure the adequacy of respiratory protection for his employees based upon the verified results of personal air sampling.

8. If at any time air sampling data indicates airborne exposures exceeding one-half the OSHA Permissible Exposure Limit, all affected employees' respiratory protection will be upgraded.

9. Personal air sampling results shall be posted on the Decontamination unit during the abatement phase, and the site management station during the deconstruction phase.

2.6.1.1 Respirator Testing

Each individual who must wear a respirator will be required to be clean-shaven where the sealing areas of the respirator face piece contacts the face. Each respirator user will be respirator fit-tested in accordance with 29 CFR 1910.134 at least annually. Upon donning the respiratory device or before entering any restricted work area, each respirator wearer will be required to perform a manual negative and positive-pressure test. Subcontractor employees who fail the negative/positive pressure test because they are not clean shaven will be required to leave site for the day or to shave on-site immediately preceding entry into the work area.

2.6.1.2 Respirator Inspection, Sanitization, and Maintenance

All respirators will be cleaned, sanitized, inspected, assembled, and maintained ready for use on a daily basis. Each respirator will be stored in a clean and sanitary container. Prior to use, the wearer will inspect the respirator, including the valves, valve covers, nosepiece, straps, eyepiece (for full-face respirators), face piece and its snaps, cylinders, and canisters to insure that the respirator can be worn. The Subcontractor will provide initial training concerning the use of respirator equipment, but each employee will be responsible for cleaning, inspecting, maintaining, sanitizing, and storage of his/her respirator equipment.

If a respirator becomes chemically contaminated or malfunctions, the respirator will be replaced by the employer with a clean and sanitized respirator, and the contaminated/defective respirator shall be decontaminated and repaired before reuse, or tagged "out of service" and disposed of. The respirator wearer shall inspect the replacement respirator for defective parts and leaks and will be fit tested if the replacement respirator is of a different make, model or size than the original.

NYC-WTC_000134392

NYC 9/11 Public Portal Document

2.6.2 Medical Response Equipment

The following medical response equipment shall be available on-site for the duration of the site activities. The locations of these equipment stations shall be determined at the site and incorporated into this HASP upon initiation of each task. The Contractor CSO shall maintain responsibility for the incorporation of this information into this HASP.

- Eyewash Stations: The location of emergency eyewash stations shall be determined. Each station shall provide a continuous spray of a rate of 0.4 gallons per minute for at least 15 minutes. This station shall be inspected daily to ensure proper operation.

- First Aid Kits: The locations of fixed and/or portable kits shall be determined. As a general guideline, each Subcontractor shall provide, at minimum, one first aid kit for every 20 employees and shall station it within the work area (for Level D operations) or directly outside the decontamination area (contaminant reduction zone) (for Level C or Level B operations).

The locations of eyewashes and first aid kits and the procedures for using and reporting an incident shall be presented during the initial on-site training. The Contractor CSO shall make all personnel aware of the locations and use of this equipment prior to engaging in site work activities.

2.7 PERSONAL AIR MONITORING

Each Subcontractor and trade employer shall perform personnel air sampling for the following contaminants during Abatement Phase of the project: particulates as TSP, metals as TSP, asbestos, PAHs, D/Fs, PCBs, mercury, lead and silica. Additionally, daily personnel sampling for lead, cadmium, chromium and mercury shall be performed during all cutting operations as required by 29 CFR 1926.62(d)(2)(iv) and the Cadmium in construction standard [29 CFR 1926.112]. The results of personnel monitoring will be reviewed on a daily basis by the Subcontractor Safety Officer to determine if current levels of respiratory protection are adequate. The subcontractor safety officer shall provide written documentation of this review to CSO and the subcontractor must immediately report any results that trigger PPE upgrades. The following table lists the OSHA PEL, site specific Action Level, and trigger levels:

NYC-WTC_000134393

NYC 9/11 Public Portal Document

Table 2-2

Contaminants	OSHA PEL	Action Level (Half value of OSHA PEL)	10 X OSHA PEL (Protection factor for Half-face APR)	100 X OSHA PEL (Protection Factor for Full-face PAPR)
Asbestos	0.1 f/cc	0.05 f/cc	1 f/cc	10 f/cc
Antimony	0.5 mg/m^3	0.25 mg/m^3	5 mg/m^3	50 mg/m^3
Barium	0.5 mg/m^3	0.25 mg/m^3	5 mg/m^3	50 mg/m^3
Beryllium	0.002 mg/m^3	0.001 mg/m^3	0.02 mg/m^3	0.2 mg/m^3
Cadmium	0.005 mg/m^3	0.0025 mg/m^3	0.05 mg/m^3	0.5 mg/m^3
Chromium (III)	0.5 mg/m^3	0.25 mg/m^3	5 mg/m^3	50 mg/m^3
Copper	1 mg/m^3	0.5 mg/m^3	10 mg/m^3	100 mg/m^3
Lead	0.05 mg/m^3	0.025 mg/m^3	0.5 mg/m^3	5 mg/m^3
Manganese	5 mg/m^3	2.5 mg/m^3	50 mg/m^3	500 mg/m^3
Mercury	0.1 mg/m^3	0.05 mg/m^3	1 mg/m^3	10 mg/m^3
Nickel	1 mg/m^3	0.5 mg/m^3	10 mg/m^3	100 mg/m^3
Zinc	5 mg/m^3	2.5 mg/m^3	50 mg/m^3	500 mg/m^3

2.8 SITE CONTROL

Site control measures shall be implemented to protect the public and personnel working on-site. The aspects of site control shall address general access to the site; and access to the building and site during the deconstruction phase.

Fences, guardrails and access devices, including ladders, stairways, and walking surfaces shall be provided and maintained throughout the project activities in accordance with 29 CFR 1926. In addition, barricades, warning signs, temporary lighting and other safety measures shall be provided, as required, to protect site personnel.

All visitors to the site shall report first to the Contractor field office. Visitor access shall be limited to the Support Zone and Level D operation areas only, and shall be allowed only with the prior consent of the Contractor NYCSSM and the Contractor Site Manager.

No visitor (other than regulatory inspectors) shall enter a work area unescorted by a Subcontractor or Contractor representative. The presence of any regulatory agency on-site shall be reported immediately to the Contractor Site Manager.

2.8.1 Work Zones

Entry into the work zones begins once a person comes on-site. This approach reflects the dynamic nature of the operations and the need for everyone to be aware of the conditions while on-site. Using the concept of three zones for the site, the following areas are identified:

• Support Zone – This area starts at the project/property fence line and extends to the entry to where personnel enter the building to complete the work tasks. This area includes the ground outside of the building and any office spaces. In this area all personnel shall wear Level D PPE. Within this area exclusion zones may be established depending on the operations, for example:

NYC-WTC_000134394

NYC 9/11 Public Portal Document

where material handling is performed, where hoisting equipment is located or where equipment is staged.

• Decontamination Unit/Contamination Reduction Zone (CRZ) – This area shall be located subject to approval of the variance. The CRZ shall exist until the completion of Abatement Phase activities. Personnel shall be aware of and follow all site control procedures with respect to entering and exiting the CRZ, to ensure that they are not exposed to contaminants and to minimize the potential for contamination of personnel and the spread of contamination outside the Exclusion Zone (EZ). These measures include having personnel follow the proper procedures for donning and removal of PPE and washing in the CRZ. The measures also address the decontamination procedures for use when moving equipment between zones. The CRZ shall consist of an area to drop off equipment, plastic bags to dispose of protective clothing, adequate soap and water for personnel and equipment decontamination and a means of capturing wash water generated during decontamination. The CRZ shall also have a first-aid kit, fire blanket and fire extinguisher (20-lb ABC type).

• Exclusion Zone (EZ) – This area extends from the side of the CRZ facing the building and includes all areas on each floor of the building. This definition of the EZ shall remain effective until Abatement Phase activity on each floor is completed. No employee shall enter the Exclusion Zone without the required training and PPE. No employee shall eat, drink, chew gum, apply cosmetics, smoke or use other tobacco products while in the Exclusion Zone. The employee must first exit the Exclusion Zone and follow decontamination procedures (Section 2.8.2.1) in the CRZ before engaging in any of the above actions. In the event that an employee in the EZ requires a replacement or his/her protective suit or respirator filters, the employee shall exit the EZ and utilize proper decontamination procedures in the CRZ, replace or repair the defective PPE, then reenter the EZ.

2.8.2 Personnel and Equipment Decontamination

When exiting the EZ, personnel shall be aware of and follow the procedures used to decontaminate personnel, equipment, and sampling containers. Subcontractors shall ensure that their employees follow proper decontamination and waste disposal procedures. Disposal of PPE and other items shall be performed in accordance with Section 3 of this HASP, with material placed in appropriately sized and labeled containers. Specific decontamination procedures are presented in the following subsections. All decontamination procedures shall be in accordance with the Entry/Exit Procedures of NYC Title 15, Chapter 1.

2.8.2.1 Personnel Decontamination Procedure

Personnel entering containment are required to follow proper decontamination procedures. All employees who leave the Exclusion Zone shall follow the decontamination process as outlined below.

All employees shall remove all gross contamination and debris from disposal protective clothing and equipment by vacuuming prior to leaving the EZ. All employees must be HEPA vacuumed before entering the CRZ. Upon entering the CRZ, each employee shall remove the first layer of protective clothing and place it in the appropriate container. If the employee performs duties and

NYC-WTC_000134395

NYC 9/11 Public Portal Document

becomes "grossly contaminated", the decontamination procedure will include an Alconox (soapy) wash and a tap water rinse of the outer suit, gloves and overboots prior to removal of the outer layer.

After employees remove the first layer of tyvek and gloves, they shall then move into a second decon area where the second tyvek and gloves shall be removed and placed in the appropriate waste container. After this decontamination, personnel shall proceed to a washing facility to take full showers. The employee shall dispose of all protective clothing upon exiting the decontamination unit; all half-face APR respirator cartridges, if used, shall be changed out, as needed, but on a daily basis at a minimum. Full-face PAPR cartridges may be utilized more than one day if functioning as designed and sealed and decontaminated after each use.

2.8.2.2 Equipment Decontamination Procedure

Since equipment decontamination is difficult, unnecessary equipment shall not be brought into the controlled areas. All materials used in the regulated area shall be properly HEPA vacuumed and wet-wiped before leaving the first decontamination zone. All equipment that becomes "grossly contaminated", will require an Alconox wash and tap rinse.

2.8.3 Safety Meetings

A safety meeting shall be held each day with the Contractor and each Subcontractor prior to initiating the scheduled activities and at the beginning of each day. The topics and content for the Safety Meeting shall be prepared in advance by the subcontractors and submitted to the Contractor for approval. The safety meeting shall review elements in the site HASP and the procedures for working on-site, and address the impacts of changes to the site conditions.

Topics to be addressed include:

- Use and maintenance of PPE
- Evacuation routes;
- Warning signals;
- Maintaining line-of-sight and communications;
- Rehearsal of scheduled activities;
- Hospital routes;
- Locations of safety equipment;
- Previous violations of the safety plan and procedures or changes to the program to correct the violation;
- Anticipated hazards for the day's work activities;
- Any changes to the requirements for levels of PPE;
- The locations of work zones; and
- General site conditions.

All safety meetings shall be documented in the site H&S logbook. Meeting participants shall sign an attendance sheet.

NYC-WTC_000134396

NYC 9/11 Public Portal Document

2.9 TRAINING PLAN

All personnel directly involved in the project site activities shall be trained for the tasks they will perform, as required by applicable federal/state/local regulations. Refresher training will be performed at least yearly. In addition, all site personnel shall participate in site-specific training and participation of personnel in training shall be documented, with proof of training maintained on-site. The topics of training required are dependent on the SOW. This training shall be administrated by the Contractor, the Subcontractor, or certified training facilities.

2.9.1 Health and Safety Awareness Training

Each Subcontractor shall be responsible for presenting and discussing the elements of this HASP with their personnel and subcontractors, and ensuring that personnel follow the elements of this HASP when working on-site. Prior to the start of work activities, or whenever a new hazard is introduced into the work area, employees shall be provided with the information indicated below. The Contractor or HASP CIH shall be available to address any questions or assist in the presentation of the HASP information to project employees. Information to be addressed during this training shall include, but not be limited to:

- Hazardous chemicals present at the work site and their associated health risks.
- Potential physical hazards associated with the work activities, and proper safety practices.
- Proper use of all tools and equipment to complete the scope of work activities.
- Requirements of the site Hazard Communication Program, including the labeling of containers.
- Site alarm system, emergency response procedures, and location of emergency lay down Area.
- Proper PPE to be used during work activities.
- Location of the MSDS files.
- How to reduce or prevent exposure to hazardous chemicals through the use of procedures, work practices, and personal protective equipment.

2.9.2 Asbestos Training

ACBM was determined to be in several building components per the Airtek Building Asbestos Survey. Building Personnel entering containment shall be trained to identify ACBM and the hazards associated with asbestos in accordance with the OSHA Asbestos Standards (29 CFR 1910.1001 and 29 CFR 1926.1101) and state/local certification requirements. This training provides personnel with a better understanding of asbestos and the steps to be taken to protect themselves and the public. In all areas, required NYSDOL and NYCDEP procedures shall be followed.

2.9.3 HAZWOPER Training

Personnel entering the exclusion or contamination zones for the purpose of performing cleanup abatement activities must have received the required 40 hour training as outlined by 29 CFR

NYC-WTC_000134397

NYC 9/11 Public Portal Document

1910.120(a) (i) and appropriate annual refresher training as required. This HAZWOPER training requirement may be removed, should sampling indicate training requirement downgrade is appropriate.

2.10 PERSONAL PROTECTIVE EQUIPMENT TRAINING

Each Subcontractor shall provide training concerning the use of PPE to their personnel, as specified by this plan, to address the general PPE requirements and any specific requirements for PPE they may use, such as fall protection. The Contractor SSM or CSOCSO can assist with this training, and any concerns regarding the use of appropriate PPE shall be brought to the attention of the Contractor SSM. Further discussion of the types of PPE is presented in Subsection 2.5 of this HASP

2.10.1 Emergency Response Training

Emergency response training, in accordance with the Emergency Action Plan found within Section 2 of this HASP, shall be provided to all on-site-personnel as part of the site-specific safety and health awareness training. The emergency response training shall be conducted by each Subcontractor's Safety Officer for her respective employees. At a minimum, the topics of this training shall include the following:

- Location of all site emergency equipment
- Response procedures for fires
- Response procedures for injuries and accidents
- On-site/off-site response resources
- Emergency site operations shut down procedures
- On-site "Chain of Command"
- Designated on-site emergency meeting location
- Recognition of evacuation signals and alarms

2.10.2 Visitor Training

Authorized Visitor: The client, his representative and any representative of a regulatory or other agency having jurisdiction over the project.

During the Abatement Phase all visitors entering the EZ must provide proof of an up-to-date fit-testing and medical clearance, and completion of asbestos certifications required for the employee's scope of work. In addition each visitor will receive site-specific training by the Contractor SSM or CSOCSO that includes:

- Location and description of potential hazards and risks
- Required PPE
- Areas of the site that may be closed to visitors
- The site evacuation plan and emergency procedures
- Other Topics as deemed appropriate by the Contractor SSM

NYC-WTC_000134398

NYC 9/11 Public Portal Document

2.10.3

Because of lead and cadmium being identified as COPCs and the potential for lead fumes or dust to be produced in deconstruction from building materials, subcontractors will provide proof of training required in OSHA Specific Standards 29 CFR 1926.65 (Lead in Construction) and 1926.1127 (Cadmium).

2.11 HAZARD COMMUNICATION

The Contractor and Subcontractors shall notify the Contractor SSM of any hazardous products prior to bringing the chemical on site and shall provide a MSDS for each product. These MSDSs shall be maintained by the Contractor SSM and shall be kept in a site master file. In addition, each Subcontractor shall maintain a copy of the MSDS for each product that they bring on-site.

The SSM will have the responsibility to review MSDSs for hazardous materials proposed for the site in order to investigate potential alternate products that are non-hazardous.

The Subcontractor shall review with the Contractor SSM the procedures for handling, using and storing the chemicals brought on-site, and shall review with their personnel the proper procedures for handling, using and storing the chemicals before the product is used on-site. This includes but is not limited to all commercial products brought on-site by Subcontractors, including commercial cleansers, degreasers, lubricants and paints.

2.11.1 Container Labels

All containers of hazardous materials shall be labeled in accordance with appropriate standards. The labels on containers provided by the manufacturer, importer, or distributor shall be used.

Labels affixed to containers of hazardous materials shall:

- Identify the material using a name with which workers are familiar,
- Identify the hazards associated with the material, including toxicity information
- Identify the material using a name with which workers are familiar.
- Identify the hazards associated with the material, including toxicity information that indicates symptoms and target organs.
- Identify the name, address, and telephone number of the manufacturer, importer or distributor where more information may be obtained.

Labels shall not conflict with Hazardous Materials Transportation Act (HMTA) labeling requirements and shall meet the requirements of OSHA substance-specific health standards, where required.

Labeling shall be required of all portable/temporary hazardous materials containers at all times. The contractor/subcontractor shall prepare a container label on portable containers filled from a correctly labeled container and when the container label is defaced or illegible. The prepared

NYC-WTC_000134399

NYC 9/11 Public Portal Document

temporary label shall indicate pertinent chemical identification and health information as required by OSHA.

All hazardous materials containers shall be labeled for content, hazard, and storage prohibitions, such as those relating to temperature range and chemical incompatibility with other materials and/or wastes. The labels shall be in compliance with requirements of New York State law. Containers containing hazardous waste shall also be labeled or marked clearly with the words, "Hazardous Waste".

2.11.2 Material Safety Data Sheets (MSDSs)

All MSDSs shall be submitted by the Subcontractors and shall be maintained by the Contractor SSM within a site master file. In addition, each Subcontractor shall maintain a copy of the MSDS for each product that they bring on-site. In addition, each Subcontractor shall also retain a log of MSDSs for chemicals used on this project and this log shall be kept on-site. The location of the MSDS folder shall be made known to all project employees.

Each Subcontractor shall review incoming MSDSs for new or significant health and safety information and shall ensure that any new information is communicated to affected employees, the Contractor SSM and other subcontractors. If an MSDS is not received at the time of initial shipment of materials, the material may not be used until the MSDS has been obtained from the manufacturer.

Employees shall be instructed to notify their Site Manager if an MSDS is not available. When a revised MSDS is received, the Site Manager shall immediately replace the old MSDS. Subcontractors shall insure that the MSDSs on file for their chemicals are current (updated within the last two years)

2.12 ACCIDENT PREVENTION & INVESTIGATION

A vital element of maintaining safe work practices is accident prevention. The following four actions are instrumental to accident prevention, and shall be communicated to all project personnel:

- Eliminate unsafe conditions. Efforts shall be initiated and implemented throughout the project to identify conditions that can contribute to an accident, and to remove exposure to these conditions. Each Subcontractor Safety Officer shall audit the work area prior to each shift to identify and correct any unsafe conditions.

- Reduce unsafe acts. Personnel shall make a conscious effort to work safely. A high degree of safety awareness shall be maintained so that safety factors are an integral part of each task. Daily safety briefings shall be designed to heighten general safety awareness and will be tailored to the individual audiences and tasks each day.

NYC-WTC_000134400

NYC 9/11 Public Portal Document

- Inspect frequently. Regular safety inspections of the work site, material, equipment, and operations by qualified persons (i.e., Contractor SSM) shall be performed to ensure early detection of unsafe conditions. Safety and health deficiencies shall be corrected as soon as possible, or site activities shall be suspended. All inspections shall be documented and the records retained by the Subcontractor for, at a minimum, the duration of the project. Copies of the inspection reports shall be provided to the Contractor SSM or Contractor Project Manager upon request,

- Educate personnel concerning the requirements of the HASP. The HASP and all site health and safety education shall be provided by each Subcontractor, the Contractor SSM and CSOCSO.

All minor accidents (i.e., small fires, injuries, and near misses) shall be investigated by the Subcontractor Site Manager or Safety Officer and communicated to the Contractor SSM immediately when reported to the Subcontractor. The Contractor should also be contacted as soon as possible. An accident investigation shall include reviewing the accident/incident report, questioning the injured employee(s) as well as other personnel witnessing the occurrence, identifying all contributing acts and conditions, determining underlying reasons for their existence or occurrence, and implementing corrective actions. A report documenting the investigation shall be written and forwarded by the Subcontractor to the Contractor SSM and the Contractor Project Manager. Recommendations for accident prevention shall also be made in the report and communicated to all site personnel during periodic safety briefings and training sessions.

2.13 MEDICAL SURVEILLANCE PLAN

All persons involved in Abatement Phase activities shall be enrolled in an HAZWOPER and/or asbestos medical monitoring program, as appropriate, prior to working on-site. This requirement ensures that personnel are protected from asbestos and other COPCs that have been identified. In the event that air sampling confirms the presence of asbestos levels above the OSHA PEL, then guidance concerning the requirements for annual medical examinations shall be provided by the Contractor SSM.

2.13.1 Respiratory Protection

All personnel having to wear a respirator must have a medical evaluation as required by 29 CFR 1910.134 to determine fitness to use respiratory protective equipment prior to initiation of work activities. Documentation of fit-testing, medical qualification and training shall be provided for each person who may need to wear respiratory protection on the job. Each Subcontractor shall maintain a written Respiratory Protection Program developed by a competent Person as required by 29 CFR 1926.103.

2.13.2 Hearing Conservation

All personnel exposed to noise levels above 85 dBA must have a baseline audiometric evaluation in accordance with 29 CFR 1926.52 and 101. Personnel shall receive awareness training

NYC-WTC_000134401

NYC 9/11 Public Portal Document

concerning the hazards of noise and the procedures to properly use and maintain hearing protection. If any subcontractor exposes his employees to noise levels above 85dba, the Subcontractor must establish a written Hearing Conservation Program developed by a competent person as required by 29 CFR 1926.101 and 29 CFR 1910.95

2.13.3 First Aid

On-site First Aid/CPR/AED support shall be provided by the Contractor SSM. Additionally, each Subcontractor shall have on-site at least one person who has current training in first aid, CPR, and AED use.

2.13.4 Medical Emergency

The first worker who notices that a medical emergency or personal injury has occurred shall immediately make a subjective decision as to whether the emergency is life threatening and/or otherwise serious.

2.13.5.1 Life-Threatening and/or Otherwise Serious Incident

If a life-threatening incident occurs, those persons recognizing the situation should do whatever actions in their capabilities to reduce the threat and then the Contractor SSM shall be contacted. The Contractor SSM shall immediately notify the Emergency Medical Services (EMS) and implement emergency action procedures to have someone meet and guide EMS to the incident location. The Contractor shall be notified of the incident as early as possible.

The Contractor SSM shall be kept apprised of the situation and the location of the victim(s).

As the Contractor SSM proceeds to the accident scene, communications channels shall be opened and kept on standby until the Contractor SSM has surveyed the scene and performed a primary survey of the victim.

The Contractor SSM shall provide emergency action guidance consistent with the injury and shall relay the appropriate information to the site person meeting the EMS. Depending on the nature of the injury and the location at which the injury occurred, the Contractor SSM shall determine whether the person can be moved or whether the EMS team will need to come into the work area to assist the victim. Should the victim be injured in the Exclusion Zone, all appropriate life-saving methods shall be exercised in that area before attempting decontamination of the victim. The extent of emergency decontamination performed shall depend on the severity of the injury or illness and the nature of the contamination. If the emergency is such that emergency decontamination cannot be performed safely, the victim shall be given necessary first-aid treatment and wrapped in a blanket prior to transportation by EMS. If heat stress is a factor in a victim's injury/illness, all protective clothing shall be removed from the victim immediately.

2.13.5.2 Non-Life-Threatening Incident

NYC-WTC_000134402

NYC 9/11 Public Portal Document

Should it be determined that no threat to life is present, a co-worker will assist the injured person and contact the Contractor SSM as soon as reasonably possible. Should the victim be injured in the Exclusion Zone, a rapid decontamination consisting of Tyvek, glove and respirator removal shall be performed in the Contamination Reduction Zone prior to initiation of medical assistance. For all non-life-threatening injuries, all medical assistance shall be provided in the Support Zone to reduce the spread of contamination to medical personnel or equipment.

2.13.6 Bloodborne Pathogens

When an emergency occurs that involves the potential for contact with bodily fluids, personnel shall use procedures and PPE that minimize the potential for exposure.

All personnel who provided direct support to an injured person shall participate in a post-incident exposure review during which their role in the event and the potential for contact with bodily fluids shall be evaluated. The information relating to exposure shall be documented for each individual. The procedures for the post-exposure consultation identified in the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030) shall be followed.

All personnel on-site shall receive awareness training concerning Bloodborne Pathogens (BBP) and the procedures to be followed to respond to emergencies that occur on-site. This awareness training shall be provided by each Subcontractor prior to the initiation of work activities and when new employees are introduced to the Site

2.14 Reporting Emergencies

All site personnel, upon discovering an emergency situation, shall immediately call 911. The SMM shall be notified immediately thereafter and will assume responsibility as the onsite representative to the First Responders. The SMM shall immediately notify OWNER.

2.15 Building Evacuation

Any explosion, regardless of size or type, any structural failure, fires and certain power failures will require a complete building evacuation.

2.16 Designated Assembly Area

In the event of an evacuation the designated assembly point for site personnel is:

- #1 – Edgar Street between Trinity Place and Greenwich Street

During the safety orientation, all personnel will be instructed to locate and assemble in a manner that will not impede the operations of any business or agency in the area.
No visitors or trade personnel shall leave the assembly point until directed by the SSO. Following an evacuation, nobody shall be allowed to re-enter the Building until cleared by appropriate First Responder, safety, agency or technical personnel investigating the impact of the

NYC-WTC_000134403

NYC 9/11 Public Portal Document

incident to the Building. The SSO will provide the "all clear" signal to the contractor site managers once it is safe to return to normal work operations.

2.16 Response to Specific Emergency Events

Below is a list of unplanned events that may occur during the deconstruction project. This list may not be all encompassing, but represents "events" related to similar projects. These events include:

- Fire or explosion
- Power failure
- Structural failure
- Worker injury or illness

2.16.1 Fire or Explosion

In the event of an explosion or a fire, the SSO shall immediately:

1. Call 911
2. Initiate building evacuation procedures as outlined in Section 2.15 of this HASP
3. Meet First responders at the pre-designated location (unless circumstances dictate otherwise, it is the security desk at the Building) for briefing on the scope and nature of the emergency
4. Notify OWNER

Should there be a work stoppage in a certain area due to a fire or an explosion, work will not resume until the SSO verifies that appropriate corrective actions have been taken.

2.16.2 Power Failure

In the event of a power failure, the SSO shall immediately:

1. Call 911, if warranted
2. Coordinate with the site manager and abatement contractor to initiate containment isolation activities (e.g. both the Personnel and Waste Load Out Decontamination units must be immediately sealed to prevent a fiber release).
3. All containment isolation barriers are to remain secure until the required negative pressure has been re-established.

2.16.3 Structural Failure

Deconstruction process will create weakened sections as supporting elements are removed, such as roof sheathing, wall sheathing. In the event of a unanticipated structural failure, the SSO shall immediately:

1. Call 911, if warranted

NYC-WTC_000134404

NYC 9/11 Public Portal Document

2. Coordinate with the site manager and abatement contractor to initiate containment isolation activities (e.g. both the Personnel and Waste Load Out Decontamination units must be immediately sealed to prevent a fiber release).
3. All containment isolation barriers are to remain secure until the required negative pressure has been re-established.

2.16.4 Worker injury or illness

Potential injuries that may result in a medical emergency include:

- Slips, trips, falls, lacerations
- Trauma injuries caused by being struck by heavy equipment, building components, waste containers, etc.
- Eye injuries
- Burns from electrical, fire or explosion
- Electrical contact or electrocution
- Heat stress/stroke
- Chemical exposures
- Cardiac emergencies
- Respiratory emergencies

The Contractor and its subcontractors will respond to minor injuries requiring first aid only; major injuries or requirements for search and rescue will be handled by First Responders.

If a worker is showing signs of distress or obvious injury or illness, the SSO shall be immediately notified and provided the following information:

1. Location of victim
2. Nature of Emergency
3. Whether the victim is conscious
4. Specific details regarding the injury or illness
5. Whether the victim is in need of decontamination

The SSO will suspend work within the immediate area until the emergency situation has been corrected. If possible the subcontractors' first aid attendant shall treat the injured employee as necessary until a decision is made to seek outside medical assistance or to remove the victim from the Building.

The SSO will be responsible for calling 911 and will inform the First Responders whether asbestos abatement activities are taking place within the Building, and whether or not the injured employee has been brought through the decontamination chamber.

3.0 DOCUMENTATION

Each Subcontractor shall maintain documentation, as established by the Contractor, which shall record, at a minimum, the following information:

NYC-WTC_000134405

NYC 9/11 Public Portal Document

- The Subcontractor employees on Site, including arrival and departure times and their destination at the Site.
- Information required to be maintained by the OSHA respiratory protection standard, including medical clearance documents, training and certification records, fit-test records, and the results of personal air monitoring used to determine employee exposures. Additionally, all medical and sampling documentation required by OSHA's Lead in Construction standard must be maintained.
- Area air testing results
- Incidents and unusual activities that occur at the Site, including but not limited to injuries, illnesses, accidents, spills, breaches of security, equipment failures, weather-related problems and near-misses.
- Records of daily safety briefings, including attendance documentation for all employees required to attend.
- Records of health and safety inspections by governmental agencies
- Records of corrective actions performed in response to any deficiencies noted through government agency inspection or by the Contractor SSM.

NYC-WTC_000134406

NYC 9/11 Public Portal Document

Attachment 1

List of Acronyms

ABIH	American Board of Industrial Hygiene
ACGIH	American Conference of Governmental Industrial Hygienists
ACBM	Asbestos Containing Building Materials
AL	Action Level
ANSI	American National Standards Institute
APR	Air-Purifying Respirator
CFR	Code of Federal Regulations
CGI	Combustible Gas Indicator
CIH	Certified Industrial Hygienist
COPCs	Contaminants of Potential Concern
CPR	Cardiopulmonary Resuscitation
CRZ	Contamination Reduction Zone
dBA	decibels adjusted (decibels on the "A" scale)
EC	Emergency Coordinator
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
ER	Emergency Response
ERT	Emergency Response Team
EZ	Exclusion Zone
f/cc	Fibers per cubic centimeter
FEC	Facility Emergency Coordinator
GFCI	Ground Fault Circuit Interrupter
H&S	Health and Safety
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCP	Hazard Communication Program
HCS	Hazard Communication Standard
HEPA	High Efficiency Particulate Air
HMTA	Hazardous Materials Transportation Act
IC	Incident Commander
IDLH	Immediately Dangerous to Life and Health
IH	Industrial Hygienist
lbs	pounds
LEL	Lower Explosive Limit
MAWP	Maximum Allowable Working Pressure
mg/m3	milligrams per cubic meter
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NYCDEP	New York City Department of Environmental Protection

NYC-WTC_000134407

NYC 9/11 Public Portal Document

SSM	Site Safety Manager
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limits
PM	Project Manager
ppm	parts per million
psia	pounds per square inch, absolute
psig	pounds per square inch, gauge
Q&P	Quality and Protection
SAR	supplied air respirator
SCBA	self-contained breathing apparatus
SOW	Scope of Work
SSHO	Site Safety and Health Officer
STEL	Short-Term Exposure Limit
SZ	Support Zone
TWA	Time-Weighted Average
WTC	World Trade Center

NYC-WTC_000134408

NYC 9/11 Public Portal Document

Attachment 2

Asbestos Surveys

NYC-WTC_000134409

NYC 9/11 Public Portal Document

Attachment 3

HASP Acknowledgement Form

NYC-WTC_000134410

NYC 9/11 Public Portal Document

ATTACHMENT 3
Contractor/Sub-Contractor/Visitor HASP Acknowledgement

HASP Received by: _____ Date: _____

Print Name _____

Affiliation: _____

Address _____ Phone_____

HASP Received by: _____ Date: _____

Print Name _____

Affiliation: _____

Address _____ Phone_____

HASP Received by: _____ Date: _____

Print Name _____

Affiliation: _____

Address _____ Phone_____

HASP Received by: _____ Date: _____

Print Name _____

Affiliation: _____

Address _____ Phone_____

HASP Received by: _____ Date: _____

Print Name _____

Affiliation: _____

Address _____ Phone_____

NYC-WTC_000134411

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_____ is the designated Contractor Safety Officer (IH) for this project. His contact numbers are _____ _____ as indicated in Attachment A. These are the primary Contractor emergency contact phone numbers, and both are 24-hour contact numbers. The SSO's base of operations will be the Contractor's field office (trailer). In the event that Mr. _____ is not on site, an alternate SSO will be designated and will be responsible for ensuring proper implementation of this HASP.

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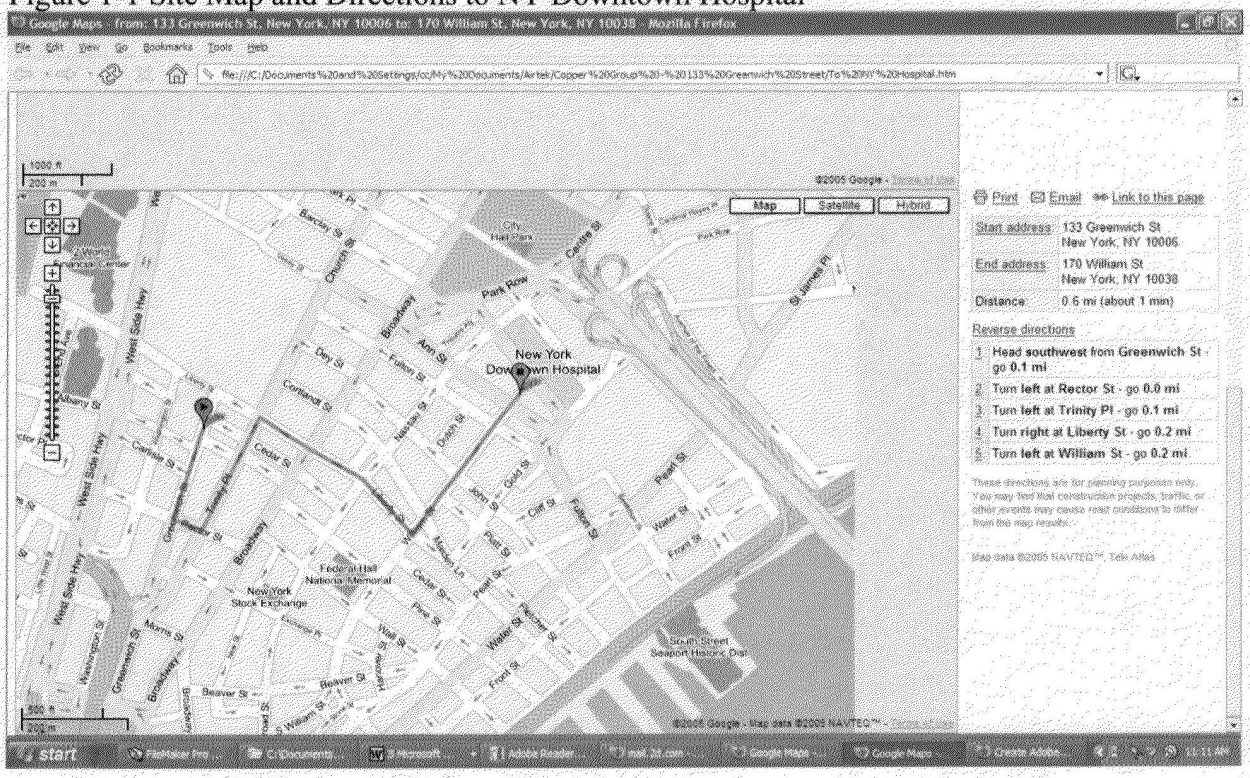
Figure 1-1 Site Map and Directions to NY Downtown Hospital



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Attachment 4

CONTACTS/EMERGENCY TELEPHONE NUMBERS

PROJECT NAME: 133-135 GREENWICH/21-23 THAMES STREET ABATEMENT PHASE DECONSTRUCTION PROJECT

THE FOLLOWING ARE THE BUSINESS AND HOME TELEPHONE NUMBERS WHERE PROJECT PERSONNEL CAN BE REACHED AT ALL TIMES. IN ADDITION, THE EMERGENCY TELEPHONE NUMBERS OF OTHER VITAL AGENCIES ARE LISTED.

AIRTEK CORPORATION (212)768-0516

PRINCIPAL:	Benn Lewis	MOBILE	(917) 295-0810
SENIOR PROJECT MANAGER:	Mike Porter	MOBILE	(917) 337-4325
ALT. PRINCIPAL:	Mike Zouak	MOBILE	(917) 495-9242
CIH	Clifford Cooper	MOBILE	(914) 388-9796

CONSTRUCTION MANAGER:
HEALTH & SAFETY OFFICER:

CONTRACTOR

SITE MANAGER
CONSTRUCTION SAFETY OFFICER (CSO)

LOCAL EMERGENCY TELEPHONE NUMBERS

FIRE	911				
AMBULANCE	911				
HOSPITAL	NYU Downtown Hospital	170 William St	911	OR	(212) 312-5000
POLICE	NYC Police Dept	2 Lafayette St	911	OR	(917) 454-1100

NYSDEC Spill Response	(800) 457-7362
Poison Control Center	(800) 962-1253
National Response Center	(800) 424-8802

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