

**Privileged and Confidential Work Product**

**HEALTH AND SAFETY PLAN  
for  
Protection Against Environmental Contaminants  
at  
Deutsche Bank Building  
130 Liberty Street  
New York, New York**

**Prepared by:**

**RJ Lee Group, Inc.  
350 Hochberg Road  
Monroeville, PA 15146**

**March 18, 2003**

**TABLE OF CONTENTS**

|  |    |
|--|----|
| 1. Introduction.....                                   | 1  |
| 2. Organization.....                                   | 2  |
| 3. Responsibilities.....                               | 3  |
| 4. Hazard Overview.....                                | 7  |
| 5. Personnel Training.....                             | 8  |
| 6. Reduction of Employee Responsibilities.....         | 10 |
| 7. Personal Protective Equipment.....                  | 12 |
| 8. Personnel Entry and Decontamination Procedures..... | 17 |
| 9. Equipment Decontamination and Waste Disposal.....   | 19 |
| 10. Special Emergency Procedures.....                  | 20 |
| 11. Documentation.....                                 | 21 |
| 12. Standards Incorporated by Reference.....           | 22 |

**TABLES**

- Table 1: Concentrations of Chemical Contaminants Identified in the Building
- Table 2: Personal Protective Equipment (PPE): Minimum Requirements

**APPENDICES**

- Appendix A: Project Safety Program (PSP)
- Appendix B: Emergency Response Plan
- Appendix C: Glossary
- Appendix D: HASP Acknowledgement Form
- Appendix E: Hot Weather Protocol
- Appendix F: Cold Weather Protocol
- Appendix G: Drug & Alcohol Policy

**HEALTH AND SAFETY PLAN (HASP)  
for Environmental Investigation of  
Deutsche Bank Building  
130 Liberty Street, New York, New York**

## **1.0 Introduction**

This project Health and Safety Plan (HASP) has been prepared to protect the health and safety of all personnel working in, on, and around the Deutsche Bank Building at 130 Liberty Street in New York, NY until such point that the environmental restoration of the Building is complete. The requirements in this document were necessitated by the physical, chemical, and biological hazards produced in the Building as a result of the collapse of the World Trade Center towers on September 11, 2001.

The collapse of the World Trade Center towers and its aftermath resulted in structural and other damage to the Building, which exposes personnel working in the Building to the risk of electrical hazards, falling materials, falling from elevated work surfaces, and other physical hazards. Debris, dust and smoke from the catastrophe deposited on various surfaces in the Building, which exposes personnel working in the Building to the risk of exposure to asbestos, heavy metals (including mercury, lead, cadmium and chromium), polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PNAs), and the group of combustion products collectively known as dioxins-dibenzofurans. Releases of water into the Building from numerous sources and food products left behind in kitchens have resulted in the growth of bacteria and fungi (molds), microbiological hazards, which expose personnel working in the Building to the risk of exposure to microbiological hazards.

This HASP sets out organizational and procedural safeguards to alert personnel working in the Building to these hazards and to limit their exposure to these hazards. It is based on current knowledge of conditions in the Building. It is intended to be a flexible document in that it may be updated as new information becomes available and as conditions change in the Building.

## **2.0 Organization**

This HASP is organized as described in this section. The hazards presented by the widespread chemical and biological contamination of the Building are addressed in the main body of this HASP. The HASP covers issues such as personal protective equipment, work practices in handling contaminated materials, decontamination facilities and procedures, engineering controls, and site-specific training. These requirements apply to work performed by environmental investigation personnel in areas that have not yet been cleaned of visible dust and debris (the “Containment Area”).

The physical and chemical hazards presented by structural demolition and construction activities are addressed in the Project Safety Program (PSP) prepared by Site Safety, LLC, which is incorporated into the HASP by reference. The PSP addresses issues such as fall protection, protection from falling objects, fire prevention, electrical safety, lockout-tagout, confined space entry, personal protective equipment for construction, hazard communication regarding chemicals brought to the site, and emergency communication. These requirements apply to all work performed in the Building both before and after cleaning of visible dust and debris. The most recent version of the PSP is maintained as Appendix A of this HASP.

### **3.0 Responsibilities**

This section outlines the responsibilities of the Site Hygiene Manager (SHM), the Environmental Investigation Site Safety Manager (EISSM), all employers on the site, as well as their Employer's Site Safety Representatives (ESSR) and employees. Emergency contact information for key personnel is provided in Appendix B of this HASP.

#### **3.1 Site Hygiene Manager (SHM) - Patrick Rafferty, RJ Lee Group, Inc.**

The SHM is responsible for ensuring overall compliance with the provisions of the HASP, except for those that are assigned to the EISSM. Specifically, the SHM:

- 3.1.1 Monitor compliance with requirements related to chemical and biological hazards contained in Federal Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1910 and 1926) for respiratory protection, personal protective equipment, and exposure to hazardous substances including but not limited to asbestos, heavy metals, PCBs, PNAs, and crystalline silica.
- 3.1.2 Ensure compliance with the occupational health requirements set forth in this HASP, working with appropriate parties to ensure that deficiencies are addressed in a timely manner, and updating the requirements of this HASP as necessary to address changing conditions and newly identified hazards in the Building.
- 3.1.3 Review collected information pertaining to the chemical and biological hazards present on the site, and summarizing and distributing that information to the environmental investigation employees on the site as necessary.
- 3.1.4 Ensure that all personnel working on the site receive appropriate training in recognition, communication, and control of hazards on the site, and in the requirements of this HASP.
- 3.1.5 Ensure that all personnel working on the site maintain up-to-date medical examinations, respirator fit tests, and asbestos training appropriate to their duties.
- 3.1.6 Cooperate with the overall Site Safety Manager (SSM), John Kane – Tishman, and the EISSM to ensure that health and safety issues on the site are identified and appropriately addressed in a timely manner.

### **3.2 Environmental Investigation Site Safety Manager (EISSM) – Mike Campbell, RJ Lee Group, Inc.**

The EISSM is responsible for ensuring compliance, by environmental investigation personnel along with all other personnel on site as assistant to the SHM, with this HASP and specific provisions of the PSP, except for those provisions that are assigned to the SHM or SSM. Specifically, the EISSM will:

- 3.2.1 Monitor compliance with safety regulations, including OSHA regulations (29 CFR 1910 and 1926), New York City Department of Buildings regulations (pursuant to Local Law 45 of 1983), and the New York City Building Code (Subchapter 19).
- 3.2.2 Inspect environmental remediation, including but not limited to asbestos abatement, mold abatement, removal of fungal contaminated materials, etc., performed in the Building to ensure compliance with the requirements for health & safety procedures as they relate to environmental concerns set forth in the Project Safety Program, and work with appropriate parties to ensure that deficiencies are addressed in a timely manner.
- 3.2.3 Identify changing conditions and new hazards in the Building, and submit recommendations for updating this HASP and the PSP as necessary to address the new conditions.
- 3.2.4 Collect and maintain copies of hazard communication programs, material safety data sheets (MSDSs), and emergency telephone numbers, from all environmental contractors on site, and distribute that information to all employers on the site as necessary.
- 3.2.5 Ensure that all environmental contracting personnel working on the site receive appropriate training in recognition, communication, and controls of physical hazards on the site, and in the requirements of this HASP and/or Project Safety Program.
- 3.2.6 Perform other duties outlined in this HASP and the PSP.
- 3.2.7 Cooperate with the SHM to ensure that health and safety issues on the site are identified and appropriately addressed in a timely manner.

### **3.3 Employers**

All employers on site are responsible for complying with this HASP and/or the PSP as they pertain to the activities and personnel of their company and subcontractors. Specifically, all employers on site will:

- 3.3.1 Employers must ensure that their work on site complies with federal, state, and local safety and health regulations, and the requirements of this HASP and/or the PSP.
- 3.3.2 Provide to the EISSM the information required to be submitted by employers on the site, including copies of hazard communication programs, material safety data sheets (MSDSs), emergency telephone numbers of key personnel, and, where applicable, written Health & Safety Program and as necessary, written Confined Space Entry Programs and Fall Protection Programs to be forwarded to the SSM.
- 3.3.3 Ensure and document that all personnel working on the site receive appropriate training in recognition, communication and controls of physical, chemical and biological hazards on to which they may be exposed, and in the applicable requirements of the HASP and/or the PSP.
- 3.3.4 Bring health and safety issues observed on the site to the attention of the SSM, SHM or the EISSM and cooperate in mitigating hazards in a timely manner.
- 3.3.5 The Employer must designate an Employer's Site Safety Representative (ESSR) to represent the employer in attending meetings and ensuring compliance with this HASP and/or the Project Safety Program.

#### **3.4 Employer's Site Safety Representative (ESSR)**

Each employer must designate an ESSR who will be responsible for monitoring the company's compliance with this HASP and/or the Project Safety Program. The employer's ESSR will:

- 3.4.1 The ESSR must ensure that their employees and subcontractors comply with applicable OSHA and New York City regulations, this HASP and/or the Project Safety Program.
- 3.4.2 The ESSR must ensure training of employees and subcontractors in the recognition, avoidance and control of chemical, biological and physical hazards present on site, including multilingual training as necessary to ensure effective communication with all employees and subcontractors.
- 3.4.3 The ESSR must maintain records as required by the HASP and/or the Project Safety Program, and applicable regulations, including medical, fit-test, and training records, for all employees and subcontractors.

- 3.4.4 The ESSR must alert the SSM, SHM and/or EISSM of conditions that present a health or safety hazard that may not be addressed by this HASP and/or the PSP and of site conditions or activities that are not in compliance with this HASP and/or the PSP.
- 3.4.5 The ESSR must attend Project Safety Meetings as requested and to communicate pertinent information to their employees and subcontractors.

### **3.5 Employees and Subcontractors**

All employees are responsible for performing their work in a healthy and safe manner in accordance with this HASP and/or the PSP. Specifically, all employees must:

- 3.5.1 Obey applicable OSHA and New York City safety and health regulations.
- 3.5.2 Familiarize themselves with the physical and chemical hazards on the site and how to protect against these hazards.
- 3.5.3 Learn and comply with the requirements of this HASP and/or the PSP as they pertain to their work, including personal protective equipment, decontamination, and specific work practices.
- 3.5.4 Learn and comply with site security requirements, including entry and exit procedures and inspections.
- 3.5.5 Obey prohibitions on drug and alcohol use; smoking in the Building; horseplay; eating, drinking and chewing except in designated areas; and using restrooms except for designated facilities.
- 3.5.6 Learn and comply with special requirements for entering restricted areas of the Building.



## 4.0 Hazard Overview

The collapse of the World Trade Center towers caused damage to structural components, windows, walls, floors, ceilings, mechanical systems, furniture, and furnishings in the Building. This physical damage has left numerous physical hazards, which expose personnel working in the Building to the risk of electrical hazards, falling materials; falling from elevated work surfaces, slip, trip and fall hazards, overhead hazards such as partially demolished ceiling systems, and other physical hazards.

Damage to the Building's structural components, windows, and curtain wall exposed the Building interior to dust, debris, and smoke from the WTC site. A ruptured fuel oil tank in the basement of the Building resulted in a fire on the B-level of the Building, which also caused fire and smoke damage to the Building. These residues expose personnel working in the Building to the risk of exposure to hazardous materials in those residues. The hazardous materials identified in those residues include asbestos, mercury, lead, cadmium, chromium, zinc, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PNAs), and the group of combustion products collectively known as dioxins-dibenzofurans. A list of these hazardous materials and typical concentrations identified in the dust in the Building are provided in Table 1.

| <b>Table 1 – Typical Concentrations of Chemical Contaminants Identified in dust in the Building</b> |                          |                       |                          |                             |                        |                        |                          |
|---|--------------------------|-----------------------|--------------------------|-----------------------------|------------------------|------------------------|--------------------------|
| <b>Asbestos<br/>[%]</b>   | <b>Mercury<br/>[ppm]</b> | <b>Lead<br/>[ppm]</b> | <b>Cadmium<br/>[ppm]</b> | <b>Chromium<br/>m [ppm]</b> | <b>PCB<br/>[ug/kg]</b> | <b>PNA<br/>[ug/kg]</b> | <b>Dioxins<br/>[TEQ]</b> |
| <1% - 2%  | 0.67                     | 5,000                 | 12                       | 200                         | 400                    | 25,000                 | 350                      |

% = percent on a volumetric basis

ppm = parts per million

ug/kg = microgram per kilogram

TEQ = toxic equivalent quantity based on 2,3,7,8 TCDF, pg/g

As a result of rainfall, water entered the Building through numerous missing windows and through the “gash” where the curtain wall and structural components were destroyed on the 8<sup>th</sup> through the 23<sup>rd</sup> floor. Water also flooded the interior as a result of broken water mains, fire-fighting activities, sprinkler releases, fire watch activities, and broken water pipes. The prolonged presence of water in the Building has resulted in the growth of bacteria and fungi (mold), which expose personnel working in the Building to the risk of exposure to microbiological hazards. Microbiological hazards have also resulted from the accumulation of garbage in the basement and from the food products that were left behind in kitchens, pantries, lunchrooms, and conference rooms throughout the Building.

Lead-based paint may be present on structural steel and other damaged Building finishes requiring demolition or cleaning.

## **5.0 Personnel Training**

### **5.1 All personnel working in the Building**

- 5.1.1 All employers must ensure that all employees and subcontractors, including specialty trades, possess all licenses, certifications, and training as required by applicable law for the work performed and as required by this HASP and/or the PSP.
- 5.1.2 All employers must ensure that all employees and subcontractors entering any part of the Building are familiar with the HASP and/or PSP.

### **5.2 Personnel working in the Containment Area**

- 5.2.1 All employers must ensure that all employees and subcontractors entering the Containment Area have received, at a minimum, within the past year the following general training in a language understood by the employees:
  - (a) A two-hour asbestos awareness-training program.
  - (b) Training in microbiological hazard awareness and protection.
- 5.2.2 All employers must ensure that all employees and subcontractors entering the Containment Area have received and documented, (see Appendix D), within the past six months, site-specific training in a language understood by the employees regarding potential physical, chemical and biological hazards in the building, to include the following topics:
  - (a) Contents and availability of this HASP and/or the PSP.
  - (b) Site communication protocols.
  - (c) Identification and control of physical, chemical and biological hazards on site.
  - (d) Selection, use, testing, limitations, and care of respirators to be worn.
  - (e) Decontamination procedures for personnel, personal protective equipment, and other equipment used on the site.
  - (f) Routes of access, egress, evacuation routes, emergency alarm systems, and emergency response procedures and requirements including methods to obtain emergency assistance and medical attention.

(g) Terms defined in the glossary in Appendix C

- 5.3 Personnel involved in environmental abatement activities must have completed City of New York asbestos training, and be a licensed asbestos abatement worker and/or supervisor by the City of New York.

Additionally, it is suggested that all environmental abatement personnel have completed an off-site training course of at least 40 hours meeting the requirements of 29 CFR 1910.120(e) on safety and health at hazardous waste operations and within the last 12 months completed annual refresher training as applicable.

## 6.0 Reduction Of Employee Exposures

6.1 Dust, debris and residues on surfaces in the Building contain a variety of chemical and microbiological contaminants, including asbestos, crystalline silica, heavy metals (including mercury, lead, cadmium, chromium, and zinc), organic contaminants (including polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PNAs), and the group of combustion products collectively known as dioxins-dibenzofurans), and microbiological contaminants (bacteria and mold).

6.2 To protect the health of workers in areas of the Building that have not yet been cleaned, employee exposures will be reduced by the following means:

6.2.1 Engineering controls:

- (a) Use fume extractors attached to high-efficiency particulate-air (HEPA) filters for all hand-held power tools.
- (b) Use HEPA-filtered air-filtration devices to reduce dust levels.
- (c) Use only vacuum cleaners that are equipped with HEPA filters.

6.2.2 Work practices:

- (a) Avoid generating dust wherever possible.
- (b) Wet all dust-laden materials before disturbing them.
- (c) Handle or remove contaminated materials in a way that minimizes the generation of dust and debris.
- (d) Thoroughly wash hands, face, hair, and neck upon leaving the area and before eating, drinking, or smoking.
- (e) No dry sweeping of any materials in the 130 Liberty Site.

6.23 Personal protective equipment:

Use the personal protective equipment, including respirators described in Section 7.

6.2.4 Decontamination procedures

Use the decontamination procedures described in Section 8.

6.2.5 Equipment decontamination and waste disposal:

Use the equipment decontamination procedures and waste disposal per Section 9.

**6.3 Hot Weather**

To protect the health of workers during hot weather, the hot weather protocol detailed in Appendix E will be followed by all personnel in the Building. During hot weather, the EISSM Hygiene Manager will monitor the temperature in active work areas, and will post the results of these measurements and inform work crews as to the appropriate work-rest regimen.

6.4 To protect the health of workers in the gash after it has been cleaned and while it is still open to the outside air, employee exposures should be reduced by the following means:

6.4.1 Engineering controls:

- (a) Natural ventilation.
- (b) Fume extractors or high-efficiency particulate-air (HEPA)-filtered air-filtration devices to reduce dust levels.
- (c) High-efficiency particulate-air (HEPA)-filtered vacuum cleaners to remove dust and debris, rather than brooms or shop-vacs.

6.4.2 Work practices:

- (a) Remove lead-based paint before cutting, grinding, or other activities that would be expected to disturb the paint.
- (b) Avoid generating dust wherever possible.
- (c) Thoroughly wash hands and face upon leaving the area and before eating, drinking, or smoking.

6.4.3 Personal protective equipment as specified in this HASP and/or the Project Safety Program.

## 7.0 Personal Protective Equipment

### 7.1 Minimum Requirements

| Table 2 – Personal Protective Equipment (PPE): Minimum Requirements   |  |  |   |
|---|--|--|---|
| Location  | Hazards  | Activity                               | PPE Required  |
| Areas that <b>have not yet been cleaned</b> of visible dust and debris (the Containment Area) except basement and 4 <sup>th</sup> floor kitchen | Asbestos, crystalline silica, heavy metals, PCBs, PNAs, dioxins, mold and bacteria in air, on surfaces, and in dust, debris and porous materials.  | General access, inspection or sampling | Respirator: ½ or full-face APR with P-100 in remaining areas<br><br>Eyes: Safety glasses or goggles<br><br>Clothing: Double suit (Tyvek outer suit)<br><br>Shoes: Hard-soled work boot<br><br>Gloves: Nitrile<br><br>Hard hat, Flashlight               |
| Areas that <b>have been cleaned</b> of visible dust and debris except basement interior and 4 <sup>th</sup> floor kitchen                       | Interstitial and cross-contamination by asbestos, crystalline silica, heavy metals, PCBs, PNAs, dioxins, mold and bacteria   | General access or inspection           | Eyes: Safety glasses or goggles<br><br>Clothing: Shirt and long pants<br><br>Shoes: Hard-soled work boot<br><br>Gloves: Cotton or leather<br><br>Hard hat   |
| Basement <b>before removal</b> of garbage and moldy materials   | Bacteria & fungi in rotted foodstuffs and moldy materials resulting in contamination of air and surfaces and insect and rat infestation. Area also contaminated with asbestos, crystalline silica, heavy metals, PCBs, PNAs, dioxins, mold, and bacteria in air, on surfaces, and in dust, debris, and porous materials. | General access, inspection or sampling | Respirator: 1/2 or full-face APR with P-100/OV filters<br><br>Eyes: Sealed goggles<br><br>Clothing: Double suit (Tyvek outer suit)<br><br>Shoes: Hard-soled work boot<br><br>with rubber outer boots<br><br>Gloves: Nitrile<br><br>Hard hat, Flashlight |

| <b>Table 2 – Personal Protective Equipment (PPE): Minimum Requirements</b>                |  |  |  |
|---|--|--|--|
| <b>Location</b>   | <b>Hazards</b>   | <b>Activity</b>                                | <b>PPE Required</b>  |
| Basement <b>during removal</b> of garbage and moldy materials                             | Bacteria & fungi in rotted foodstuffs and moldy materials resulting in contamination of air and surfaces and insect and rat infestation. Area also contaminated with asbestos, crystalline silica, heavy metals, PCBs, PNAs, dioxins, mold, and bacteria in air, on surfaces, and in dust, debris, and porous materials. | Garbage removal, remediation and disinfections | Respirator: Full-face supplied-air pressure-demand<br><br>Clothing: Triple suit (poly prop, Tyvek & Saranex outer suit)<br><br>Shoes: Hard-soled work boot<br><br>with rubber outer boots<br><br>Gloves: Nitrile with durable outer glove<br><br>Hardhat. Flashlight           |
| Basement interior areas that <b>have been cleaned</b> of visible dust and debris          | Interstitial and cross-contamination by asbestos, crystalline silica, heavy metals, PCBs, PNAs, dioxins, mold and bacteria   | General access or inspection                   | Respirator: ½ or full-face APR with P-100 filters<br><br>Eyes: Safety glasses or goggles<br><br>Clothing: Shirt and long pants<br><br>Shoes: Hard-soled work boot<br><br>Gloves: Cotton or leather<br><br>Hard hat, Flashlight   |
| 4 <sup>th</sup> floor kitchen <b>before removal</b> of rotted foodstuffs and disinfection | Bacteria & fungi in rotted meat, fish, and vegetables, resulting in contamination of air and surfaces and insect infestation. Area also contaminated with asbestos, crystalline silica, heavy metals, PCBs, PNAs, and dioxins, in air and on surfaces.   | General access, inspection or sampling         | Respirator: ½ or full-face APR with P-100/OV filters<br><br>Eyes: Sealed goggles<br><br>Clothing: Double suit (Tyvek outer suit)<br><br>Shoes: Hard-soled work boot<br><br>with rubber outer boots<br><br>Gloves: Nitrile with durable outer glove<br><br>Hard hat, Flashlight |

| <b>Table 2 – Personal Protective Equipment (PPE): Minimum Requirements</b>                |  |  |  |
|---|--|--|--|
| <b>Location</b>   | <b>Hazards</b>   | <b>Activity</b>  | <b>PPE Required</b>  |
| 4 <sup>th</sup> floor kitchen <b>during removal</b> of rotted foodstuffs and disinfection | Bacteria & fungi in rotted meat, fish, and vegetables, resulting in contamination of air and surfaces and insect infestation. Area also contaminated with asbestos, crystalline silica, heavy metals, PCBs, PNAs, and dioxins, in air and on surfaces. | Removal of rotted meat, fish, and vegetables, remediation, or other disturbance of materials | Respirator: Full-face supplied-air pressure-demand<br><br>Clothing: Triple suit (poly prop, Tyvek & Saranex outer suit)<br><br>Shoes: Hard-soled work boot<br>with rubber outer boots<br><br>Gloves: Nitrile with durable outer glove<br><br>Hardhat. Flashlight |
| 4 <sup>th</sup> floor kitchen <b>after removal</b> of rotted foodstuffs and disinfection  |  | General access or inspection   | Respirator: ½ or full-face APR with P-100/OV filters<br><br>Eyes: Safety glasses or goggles<br><br>Clothing: Double suit (Tyvek outer)<br><br>Shoes: Hard-soled work boot<br><br>Gloves: Nitrile<br><br>Hard hat, Flashlight                                     |

## 7.2 Respiratory protection

- 7.2.1 Only those personnel who have been medically qualified to wear a respirator, and who have been fit tested in the particular respirator (i.e., manufacturer, model and size) they intend to wear, will be allowed to wear a respirator in the Building.
- 7.2.2 All employers must provide their personnel who may wear a respirator in the Building with personally issued and marked respiratory equipment in accordance with the OSHA asbestos standard (29 CFR 1926.1101) and the OSHA respiratory protection standard (29 CFR 1910.134), including a written respiratory protection program that includes air monitoring, medical monitoring, training and fit testing for employees who wear respirators.



- 7.2.3 Respiratory protection must be determined based on Table 2 according to work area and work activity. A respirator of lesser protection may not be used unless sufficient full-shift personal air monitoring has been conducted, representative of "worst case" situations and determined by the SHM to support a downgrade in protection. At no time in the project may disposable dust masks be used for respiratory protection on the site.
- 7.2.4 Personnel must ensure that their respirators form a seal against the face so that the wearer receives air only through the air purifying cartridges or hose attached to the respirator. Facial hair that interferes with the effectiveness of a respirator will not be permitted.
- 7.2.5 Respirator filters must be changed at the end of each shift. Employers must provide a sufficient inventory of filters for daily replacement.
- 7.2.6 Employers are responsible for ensuring the adequacy of respiratory protection (or the lack of respiratory protection) for its employees and subcontractors based on personal air sampling.

Employers will collect personal air samples of employees according to a Personal Air Sampling Plan, which will be submitted to the SHM for approval. The Plan will describe the contaminants to be sampled, the frequency of sample collection, the method of sample collection and analysis, and the method by which employees will be identified for sampling. An employer may rely on specific air monitoring results previously developed by another employer on site if deemed by the SHM to be representative of the employer's employee exposures.

If at any time personal air samples indicate airborne exposures above one-half of the OSHA Permissible Exposure Limit, or PEL (using the protection factor of the respirator and the OSHA formula for exposure to multiple contaminants), respiratory protection will be upgraded for the activities represented until engineering and work practice controls are demonstrated through additional monitoring of the activity to reduce exposure levels below one-half of the PEL.

### **7.3 Head protection**

Hard hats are required to be worn at all times in all areas of the Building, except for areas authorized for use as offices, restrooms, break rooms, sample preparation areas, locker rooms, showers, and changing rooms.

Wearing of head protection "backwards" is prohibited on the site.

### **7.4 Eye protection**

Eye protection must be worn at all times and in all locations in the Building excepts for areas authorized for use as offices, restrooms, break rooms, sample preparation areas, locker rooms, showers, and changing rooms. Eye protection may consist of approved safety glasses, safety goggles, welding goggles, welding hoods, or full-face respirators.

#### **7.5 Disposable protective clothing**

Personnel entering the Containment Area must wear protective clothing that provides complete skin coverage. This clothing will consist of double suits; inner polypropylene and outer Tyvek.

- 7.5.1 Protective clothing that becomes ripped or torn during the workday must be repaired or replaced immediately.
- 7.5.2 Except in areas otherwise specified in Table 2, outer protective clothing must be of the nonporous type and/or specifically manufactured for use in asbestos regulated areas (Tyvek or equivalent).
- 7.5.3 Disposable protective clothing must be discarded and disposed of as asbestos waste every time the wearer exits from the Containment Area through the decontamination facility.
- 7.5.4 Wearing of suits through the flaps at the ramp exit of the building is prohibited.

#### **7.6 Construction clothing**

All personnel assigned to work in previously cleaned areas of the “Containment Area” must have a minimum of hardhat, work boots, safety glasses, long pants, and a shirt, regardless of task.

## **8.0 Personnel Entry And Decontamination Procedures**

### **8.1 General Building Access**

All personnel entering into the Containment Area must observe the “buddy system” at all times, maintaining communication or visual contact among crew members at all times.

Personnel new to the Building, the building owner’s employees and representatives and outside consultants, must be escorted by personnel familiar with the Building, the location of the Containment Area, physical hazards, and emergency exit routes.

### **8.2 Entrance to the Containment Area**

- 8.2.1 All personnel to enter into a Containment Area must sign in at the entrance to the Containment Area (This “sign in” is in addition to the general Building access sign-in).
- 8.2.2 All personnel who will enter the Containment Area must Double Suit; poly inner and Tyvek outer, Nitrile gloves and their assigned respirator in the change room. Workers must then pass through the equipment room and into the Containment Area.
- 8.2.3 Personnel must not eat, drink, smoke, chew gum, or tobacco in the Containment Area. To do any of the above, the worker must leave the Containment Area following the complete decontamination sequence.
- 8.2.4 In the event that a worker in the Containment Area requires replacement of a protective suit or respirator filter, he should exit the containment area utilized proper decontamination procedures, make necessary repairs or replacements, don their respirator and new protective clothing and re-enter the Containment Area.

### **8.3 Exiting the Containment Area**

- 8.3.1 All personnel exiting the Containment Area must pass through the Decontamination Enclosure System to decontaminate or dispose of their clothing and equipment.
- 8.3.2 Before leaving the Containment Area, personnel must remove all gross contamination and debris from their disposable coveralls and equipment by vacuuming with HEPA vacuums. Removal of materials from protective clothing or equipment by blowing, shaking, or any other means that may disperse materials into the air is prohibited.

- 8.3.3 Personnel will then remove their outer Tyvek and place them in the lined barrels
- 8.3.4 Personnel will then proceed to Chamber B and remove their inner suit and gloves and place them in the lined barrels provided.
- 8.3.5 Personnel must then proceed immediately into the shower room and wash and rinse hair, neck face respirator, arms, and hands.
- 8.3.6 Respirators must be removed after the worker has showered to prevent inhalation of fibers. Respirator filters must be disposed of at the end of each workday. Respirator filters, protective clothing and decontamination waste must be disposed as asbestos contaminated waste.
- 8.3.7 After showering, personnel must go to the clean room, dress in street clothes, and properly store respirators, and other equipment.

## **9.0 Equipment Decontamination And Waste Disposal**

### 9.1 Personal tools and equipment

Personal tools and equipment that are brought out of the Containment Area must be decontaminated in the decontamination system as described in Section 8.3.

### 9.2 Other tools and equipment

Other tools and equipment (for example, from a contractor's central stores or rental equipment) that are brought out of the Containment Area must be decontaminated in the waste decontamination system per the New York City Asbestos regulations.

## 10.0 Special Emergency Procedures

- 10.1 Personnel will be directed to evacuate the Building in the event of a medical or safety emergency, including fire, accident or any other event that increases risks associated with chemical, biological and physical hazards, until the increased risk can be assessed and controlled.
- 10.2 Site personnel must ensure that their work does not obstruct exits and that work areas are kept neat, clean, and safe.
- 10.3 Should someone be transported to a hospital or doctor, a copy of this document must accompany them. **NECESSARY EMERGENCY PROCEDURES MUST TAKE PRIORITY OVER ALL OTHER REQUIREMENTS OF THIS DOCUMENT.**
- 10.4 The extent of emergency decontamination will depend on the severity of the injury or illness and the nature of the contamination. Decontamination consists of removal of contaminated outer clothing and equipment. If the emergency is such that there is insufficient time or the contaminated clothing cannot be removed, the person should be given required first aid treatment, and then wrapped in plastic or a blanket prior to transportation to medical care. If heat stress is a factor in the victim's illness/injury, all protective garments must be removed from the victim immediately. Other than the primary exit through the personal decontamination chambers located at the freight elevators in the Level "A" parking garage and at the No.24 elevator at Cedar Street on the 1<sup>st</sup> Floor, there is an emergency exit at the South East corner of the 2<sup>nd</sup> Floor, "Lobby Floor".
- 10.5 In the event of an illness, injury, or emergency at the site, appropriate emergency measures must be taken immediately to assist those who have been injured or exposed and to protect others from hazards. Call 911 for emergency response.
- 10.6 In the event of an emergency, the SSM, SHM, and the EISSM must be notified without delay. The SSM, SHM, and EISSM will investigate the site conditions to evaluate and determine the cause of the incident, and the precautions that will be implemented to prevent a reoccurrence.
- 10.7 In case of a site emergency requiring evacuation of all or part of the Building, personnel must evacuate to a designated safe refuge location, both for their own personal safety and to prevent hampering response/rescue efforts. Each employer will account for all of its personnel.

## **11.0 Documentation**

Establish and maintain documentation that will record, at a minimum, the following information:

- 11.1 Personnel on the site, their arrival, and departure times at the Building and their destination on the site.
- 11.2 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 to determine employee exposures.
- 11.3 Incidents and unusual activities that occur on the site, such as, but not limited to, injuries, accidents, spills, breaches of security, equipment failures and weather related problems.
- 11.4 Records of safety and health inspections by governmental agencies.
- 11.5 Meeting Minutes of “Tailgate Safety Meetings”

## **12.0 Standards Incorporated By Reference**

The following publications are incorporated by reference:

### **12.1 Federal OSHA Regulations for General Industry (29 CFR 1920)**

Subpart C (General Safety and Health Concerns)

Subpart D (Walking and Working Surfaces)

Subpart E (Means of Egress)

Subpart G (Occupational Health and Environmental Control)

Subpart I (Personal Protective Equipment)

Subpart J (General Environmental Controls)

Subpart K (Medical and First Aid)

Subpart L (Fire Protection)

Subpart P (Hand and Portable Power Tools)

Subpart S (Electrical)

Subpart Z (Toxic and Hazardous Substances)

### **12.2 Federal OSHA Construction Regulations (29 CFR 1926)**

Subpart C (General Safety and Health Provisions)

Subpart D (Occupational Health and Environmental Control)

Subpart E (Personal Protective and Lifesaving Equipment)

Subpart F (Fire Protection and Prevention)

Subpart G (Signs, Signals, and Barricades)

Subpart H (Materials Handling, Storage, Use and Disposal)

Subpart I (Tools-Hand and Power)

Subpart K (Electrical)



Subpart L (Scaffolding)

Subpart T (Demolition)

Subpart X (Stairways and Ladders)

**12.3 U.S. Environmental Protection Agency regulations**

40 CFR SUBCHAPTER C:

40 CFR Part 61, Subpart A (General Provisions)

40 CFR Part 61, Subpart M (National Emission Standard for Asbestos)

US EPA 40 CFR SUBCHAPTER 1:

40 CFR Part 241, (Guidelines for the Land Disposal of Solid Wastes)

40 CFR Part 257, (Criteria for Classification of Solid Waste Disposal Facilities and Practices)

US EPA 40 CFR SUBCHAPTER R

40 CFR Part 763, (Asbestos Hazard Emergency Response Act)

**12.4 American National Standards Institute (ANSI) Publications**

Z9.2, (Fundamentals Governing the Design and Operation of Local Exhaust Systems)

Z88.2, (Practices for Respiratory Protection)

**12.5 Underwriters Laboratories, Inc. (UL) Publications**

586 (Test Performance of High Efficiency, Particulate, Air Filters Units)

**12.6 Local Asbestos Licensing Regulations**

The State of New York Department of Natural Resources and Environmental Control asbestos regulations.

The State of New York Department of Asbestos Licensing Regulation

City of New York Asbestos Licensing Authority

**12.7 National Electric Code (Latest Edition)**

**12.8 City of New York Department of Licenses and Inspections**

Building Permit and Contractor Licensing Regulations.

**12.9 American Society for Testing and Materials**

E 1368-99, (Standard Practice for Visual Inspection of Asbestos Abatement Projects).

**12.10 National Fire Protection Association (NFPA)**

Standard 701, (Standard Methods of Fire Test for Flame-Resistant Textiles and Films).

**Appendix A**  
**Project Safety Program**  
**(insert)**

**Appendix B**

**Emergency Contact List of Key Personnel**



## Appendix C

### Glossary

The following terms are defined to assist in the understanding of this Health and Safety Plan:

**Air-purifying respirator (APR)** – A respirator that purifies air in one or more filters attached to the respirator. Air is drawn through the filter through the action of the wearer inhaling.

**Clean Room** - A designated area or room that is part of the Decontamination Enclosure System, with provisions for storage of workers' street clothes and protective equipment where such clothing and equipment may be donned and doffed.

**Confined Space** - An enclosure--such as a storage tank, process vessel, boiler, silo, tank car, pipeline, tube, duct, sewer, underground utility vault, tunnel, or pit--having limited means of egress and poor natural ventilation and which may contain hazardous contaminants or be oxygen deficient.

**Contaminant** - A harmful, irritating, or nuisance material that is not normally found in the environment.

**Contaminated** - Items or areas in the Building that have been soiled by dust, smoke, asbestos, PCBs, PNAs, other toxic chemicals, or bacteria or mold.

**Containment Area** – An area of the Building set aside as contaminated and requiring special protective equipment and controls.

**Contaminated Waste** - Any material in the Containment Area that is designated as waste.

**Construction Barrier** - A barrier used to control access and isolate areas of construction or environmental abatement activities.

**Decontamination Enclosure System** -An enclosed room connected to the environmental work area used to decontaminate before entering the clean areas.

**Employer** – Employer of employees on the site, which may include the Construction Manager, Remediation Contractors, Consultants, Specialty Contractors, and Subcontractors, which furnish labor, services, supplies, or materials in the prosecution of the work, whether retained by Owner, Construction Manager, Remediation Contractor, or Insurer.

**Face** - That portion of a respirator that covers the wearer's nose and mouth in a quarter-mask (above the chin) or half-mask (under the chin) face or that covers the nose, mouth, and eyes in a full-face. It is designed to make a gas-tight or particle-tight fit with the face and includes the headbands, exhalation valve(s), and connections for an air-purifying device or respirable gas source, or both.

**Filter** - A media component used in respirators and other equipment to remove solid or liquid particles from the inspired air

**Goggle** - A device, with contour-shaped eyecups with glass or plastic lenses, worn over the eyes and held in place by a headband or other suitable means for the protection of the eyes and eye sockets.

**High-Efficiency Particulate-Air (HEPA) Filter** - A filter which removes particles from the air; such that, in test conditions it removes 99.97% or more of monodisperse dioctyl phthalate (DOP) particles having a mean particle diameter of 0.3 micrometer.

**HEPA/OV** – Respirator filter that combines the particle filtration of a HEPA filter with the ability of an organic vapor (OV) filter to remove organic vapors from the air.

**Negative Pressure Respirator** - A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

**Personal Air Monitoring** - Sampling of airborne concentrations of a contaminant within the breathing zone of a worker (near his face).

**Environmental Control s**-Equipment and barrier systems designated, erected, and maintained to physically isolate and contain specific locations.

**Equipment Decontamination Area** - A Decontamination Enclosure System specifically designed for materials and equipment, typically consisting of an entry chamber from the Environmental Work Area, a washroom, and an exit chamber.

**Equipment Room** - A room that is part of the Decontamination Enclosure System and has provisions for storage of contaminated clothing and equipment.

**Permissible Exposure Limit (PEL)** - The legally established time-weighted average (TWA) concentration or ceiling concentration of a contaminant that shall not be exceeded.

**Personal Protective Equipment** - All clothing and other work accessories designed to create a barrier against workplace hazards.

**Powered air-purifying respirator (PAPR)** – A respirator that purifies air in one or more filters attached directly or indirectly to the respirator. Air is pushed or pulled through the filter by means of a battery-powered pump attached to the wearer’s waist or respirator.

**Protection Factor** - The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of degree of protection provided by a respirator to the wearer.

**Remediation** - The act of removing contaminants from materials or areas, or of removing contaminated materials and items in their entirety.

**Respirator** - A device worn to protect the wearer from the inhalation of harmful materials in the environment.

**Supplied-Air Pressure Demand Respirator** - A respirator in which air is supplied from an outside source (self-contained tanks, remote tanks, or remote compressor). The air pressure inside the respiratory-inlet covering is positive in relation to the air pressure of the outside atmosphere during both exhalation and inhalation.

**Work Area** - A defined location in which a Contractor is performing Remediation.



**Appendix D**

**HASP Acknowledgement Form**

**SAMPLE**

I, \_\_\_\_\_, attest that I have been trained in the contents of  
(print name)

the site Health and Safety Plan (HASP) for cleanup of the Deutsche Bank Building at 130  
Liberty Street, New York, NY following the collapse of the World Trade Center.

I have read and understood the materials, and agree to abide by the requirements of the HASP as  
they apply to my work on the site.

Signed:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Supervisor's Signature)

\_\_\_\_\_  
(Employer)

**Appendix E**

**Hot Weather Protocol**

(insert)

**Appendix F**

**Cold Weather Protocol**

(insert)

**Appendix G**  
**Drug & Alcohol Policy**

### **Alcohol, Narcotics & Drugs**

To ensure that the quality and operations effectiveness of the personnel covered by this HASP are maintained at the highest possible levels, to protect the professional reputation of the companies covered by this HASP, and to comply with the Drug Free Workplace Act of 1988, the following policy is in place:

1. The use, sale, dispensing, possession or manufacture of illegal drugs and narcotics or alcohol on the project site is prohibited; except that the use and dispensing of alcoholic beverages on the premises may be permitted when specifically sanctioned as part of a site sponsored event.
2. Personnel covered by this HASP must notify their Employer's Site Safety Representative of any criminal conviction for a drug violation occurring in the workplace within 5-days of the conviction.
3. Personnel covered by this HASP are not permitted to be at work while under the influence of drugs, narcotics, or alcohol.
4. Employees violating the provisions of this policy may be subject to disciplinary action, up to and including dismissal.