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Excerpts from Draft Report

Qualification Regarding Our Observations and Conclusions

The demolition and debris removal at the World Trade Center site presented an unprecedented situation and the standard government contract procedures that would be used in a normal situation were modified to deal with the unprecedented situation. The New York City Department of Design and Construction (NYCDDC) was responsible for demolition and debris removal at the site. NYCDDC entered into awarded four oral contracts with four construction management companies for demolition and removal, as well as a contract for wetting and misting operations at the site was subcontracted under these contracts. As stated above, the standard procedures for government contracts were modified to deal with the situation. A scope of work was not issued as there was no time for standard planning in this circumstance. Instead, meetings were held every day at 9:00 a.m. to determine the work to be done and verbal directions were issued to the construction managers concerning the work to be done for the day. New York City officials would then would work with the construction managers at the site to try to insure that the work was accomplished. Another meeting was held at 5:00 p.m. to determine the progress that had been made that day and to assist in planning work for the next day. At both meetings, minutes of the previous meeting would be provided so the meeting participants could review the taskings from the previous meeting to aid in dealing with the issues for the current meeting. We contacted an NYCDDC official about demolition and debris removal operations at the site and requested copies of the statements of work for these contracts in order to determine what, if any, Asbestos NESHAP work practices were required by these contracts. Although we made multiple requests, we were not provided with copies of these statements of work. Accordingly, our review and conclusions were limited since we were unable to review these key documents.

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notification

PLANNING CONCERNING ASBESTOS-CONTAINING MATERIALS **NESHAP Notification Requirements Not Followed**

An NYCDDC official told us that the Port Authority had removed accessible asbestos-containing material from the WTC buildings prior to September 11. There was no asbestos containing material in WTC Buildings 4, 5 and 6. However, asbestos-containing material was found at the WTC site. City officials told us that the City's Asbestos Control Program rules did not apply because of the emergency situation. While EPA and New York State asbestos NESHAP regulations require that a notification be filed even in emergency situations. N

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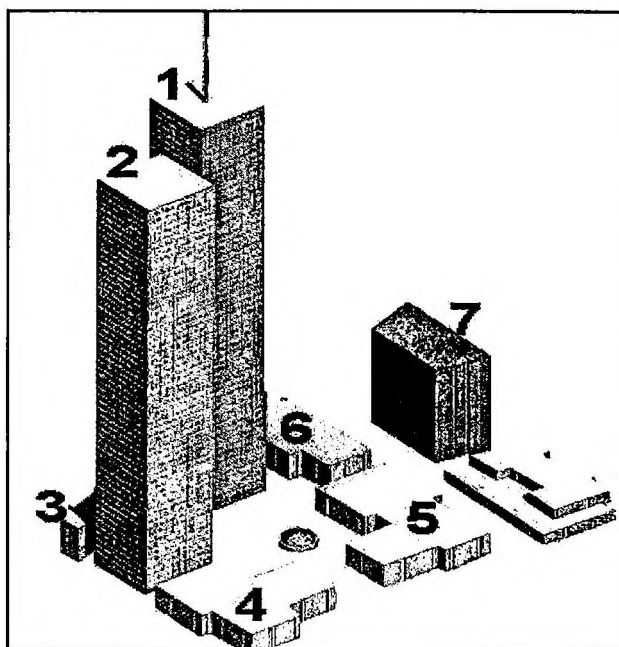
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included notification of a NESHAP demolition and removal operation was not filed for the WTC demolition and removal. Although this technical requirement was not met, proper planning was taken in the removal of asbestos-containing material and as set forth below proper procedures were followed in removing any asbestos-containing material and to minimize exposure to asbestos-containing material. Health and safety meetings were held every day to plan to deal with, among other things, removal of asbestos-containing material. These meetings were a collaborative effort among a number of City, State and Federal agencies, *→ what agency* including the EPA. All agencies, including EPA, contributed their expertise and played a role in the decision making at these meetings. These meetings discussed among other things concerning removal of asbestos-containing material, the adequate wetting down of the material. Procedures for removal of the material were continuously revised considering the location and nature of the material and any other issues affecting removal. Also, in this regard, a site safety plan was created to address issues such as the removal of asbestos-containing material. All agencies, including the EPA reviewed this plan and had input into the final version of the plan. As set forth below proper procedures including measures to insure adequate wetting down of asbestos-containing material were taken. City officials told us that the City's Asbestos Control Program rules did not apply because of the emergency situation. Further, a NYCDDC official told us that the Port Authority had removed accessible asbestos-containing material from the WTC buildings prior to September 11. Consequently, in his view asbestos was not a primary concern in the demolition.

Demolition of Damaged Buildings

NYCDDC was responsible for the demolition of the damaged WTC buildings and removal of the demolition debris. In addition to the WTC towers, WTC 3 collapsed from tower debris and WTC 7 also collapsed after burning unchecked for approximately 7 hours. The remaining three buildings in the WTC Complex were all significantly severly damaged. According to an EPA on-scene coordinator, all parts of the damaged buildings were considered in danger of collapse, although some areas were deemed accessible for after ⁷ inspections by structural engineers prior to their demolition. The following table summarizes the condition of the WTC buildings after September 11.

Seven Buildings Comprising the WTC Complex



Source: New York Times [Buildings identified in table 4-1.]

Table 4-1: Condition of WTC Buildings

Building	Condition
WTC 1 - North Tower	Complete collapse
WTC 2 - South Tower	Complete collapse
WTC 3 - Marriott Hotel	Complete collapse
WTC 4 - South Plaza	Partial collapse
WTC 5 - North Plaza	Partial collapse
WTC 6 - U.S. Customs	Partial collapse
WTC 7	Complete collapse
Source: New York City DoB/DDC/Structural Engineers Association of New York Cooperative Building Assessment, November 7, 2001.	

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The demolition of all WTC complex buildings to ground level was completed by late December 2001. WTC 4 and WTC 5 were brought down using a vertical impact system similar to a pile driver by wrecking balls. Section 27-1039d of the New York City Building Code This method of bringing down a building required approval of the Borough Commissioner of the Department of Buildings to use this method of demolition. The appropriate borough commissioner was consulted and he concurred in use of this method. had been outlawed in New York for over two decades, but an exception was granted under the special circumstances that existed after the terrorist attack. WTC 6 was brought down using mechanical grapplers. A photo of a grapppler is attached at Appendix with "special remote cutting shears."

cutting shears

~~Both NYCDDC and OSHA officials told us that~~ The WTC site was under continuous dust suppression. (If this is not acceptable then we suggest as an alternative "EPA officials were at the site and observed that the site was under continuous dust suppression." OSHA officials told us that this dust suppression was very successful, and that two minutes after demolition you could see across the space where the buildings had been. They further stated that it would have been too dangerous to send abatement contractors into WTC 4, WTC 5, or WTC 6 to remove asbestos-containing material before demolition.)

Treatment of Asbestos-Containing Materials

Both NYCDDC and EPA officials told us that when asbestos-containing material (e.g., pipe wrapping, steel insulation) was encountered during the removal, it was tested and treated in accordance with asbestos abatement procedures. According to the NYCDDC official, the majority of the asbestos-containing material was encountered when removing the remnants of the basement levels of WTC 6, ~~below the slurry wall.~~

EPA Situation Reports confirmed the NYCDDC official's statement about asbestos abatements at the site. The reports recorded instances where asbestos was found during debris removal and asbestos abatements performed. For example, the EPA May 23, 2002, situation report noted that:

Twelve (12) bulk asbestos samples were taken in the B1, B2, B3, levels of (WTC) Building 6. The samples were taken from sprayed on insulation at the request of NYC DOI. Of the twelve samples, nine (9) should (sic) results were in excess of 1% Chrysotile asbestos, the results ranged from 1.30% to 30.80%. The three samples that were not above 1% were detect for Chrysotile asbestos. These samples were taken from wind braces and girders that were suspected to contain asbestos. The samples were split samples with Bovis's

asbestos abatement contractor. Results of the contractor samples are not yet available.

The situation reports also noted the presences of asbestos-containing material and the operation of another abatement project in April 2002. According to the April 5, 2002, Situation Report, bulk testing showed that one sample of the pipe wrap that was being removed as part of this abatement contained 66 percent amosite asbestos.

Removal of Debris From Site

In an effort to minimize potential exposure to dust from the transportation of WTC to the Fresh Kills Landfill City, State and Federal agencies, including the EPA established procedures for vehicles transporting this debris. These procedures required among other measures that tarps be placed over the vehicles and that the vehicles be wet down at a wet down station. The wet down station was operated by contractors of the EPA. The volume of truck traffic during the peak period was very large amounting to over 1000 trucks per day thus presenting a challenge to insure that the procedures worked properly. In addition, the weather conditions, particularly in the winter and the high temperature of some of the debris also presented challenges to overcome in insuring the process worked properly.

Particularly in the weeks immediately following the disaster, trucks hauling debris from the site did not consistently stop to be wetted down before leaving the site. This problem was recognized by the City and the City instituted measures to enhance compliance. City agencies around October 12, 2001, began issuing summonses for failure to stop to be wet down. As many as 300 summonses were issued by the City on October 12, 2001. The City also enlisted the assistance of the New York State Department of Environmental Conservation Police, assisted by the National Guard, to enforce the requirement to stop at the wet down stations. As a result, assistance was obtained from the New York Police Department to ensure that trucks stopped at the wash stations before leaving the site. Even after this, trucks with extremely hot debris getting Police Department assistance to ensure that trucks stopped at the washing station, EPA Situation Reports indicated that the trucks were did not stopping long enough to get completely wetted down. EPA Situation Reports indicated that as late as October 13, 2001, this was still a problem. However, by the end of October 2001 to the beginning of November 2001, the problem was solved and almost 100% of the trucks were stopping at the wet down stations for a proper wet down. This success can be attributed to the cooperation of the City, State and Federal agencies and to the capability of the EPA contractor in dealing with various technical problems.

Similar observations were reported in an October 6, 2001, report funded by the National Institute of Environmental Health Sciences, which discussed worker safety issues at the WTC. The report noted that:

Vehicles leaving the site with debris, either dumps or lowboys with large sections of steel beams, are not deconned (decontaminated) and the dumps do not have covers over the loads. As a consequence, potentially hazardous dust and debris is tracked off site or is blown from the loads during transit.¹

However, certain requirements for transporting debris from the site were suspended by the Governor of New York on October 9, 2001. Executive Order No. 113.29 temporarily suspended regulations regarding the transportation and handling of certain solid waste resulting from the WTC disaster. The order applied to persons working at the site under the supervision of New York State or New York City government officials and suspended requirements for these persons to:

¹ The term decontamination in the quotation is incorrect. Wet down rather than decontamination was conducted. This was not a hazardous material situation and decontamination procedures were not required.

- **Obtain permits for the collection, transportation, and delivery of regulated waste to staging areas or disposal locations owned or operated by the City of New York, and**
- **Comply with hazardous waste management standards at the site, during the transportation of waste from the disaster site to staging areas or disposal locations owned by the City of New York, and in connection with the temporary storage of such waste at these staging area or disposal locations.**

Excerpts from Background Section of the Draft Report

Early Response

Various circumstances complicated the Government's and EPA's ability to respond to environmental concerns in what was an unprecedented and extremely difficult situation. The New York City Office of Emergency Management's Emergency Operations Center was destroyed in the attacks. EPA's Region 2 office, about a half-mile from the WTC site, was evacuated and not re-opened until 2 weeks after the attacks. Electrical power was lost in Lower Manhattan, as well as radio, and telephone, ~~and satellite communications~~. Further, transportation to Lower Manhattan was ~~restricted~~ and commercial air travel was halted nationwide. *halted*

As with most disasters, local authorities were the first responders. "Ground Zero," as the seven-building WTC area site would become known, was initially a search and rescue effort under the direction of the Fire Department of New York and, subsequently, a recovery operation under the jurisdiction of the New York City Office of Emergency Management. During the recovery phase, ~~which began November 1, 2001,~~ the New York City Department of Design and Construction and the Fire Department of New York were co-incident commanders. According to New York City's Deputy Assistant Chief of the Fire Department, "the complexity of the activity performed at one site – rescue, recovery, demolition, and construction – at one time is unprecedented." This unprecedented complexity is evidenced by the fact that the New York City Office of Emergency Management immediately undertook to coordinate the response efforts of approximately 150 City, State and Federal agencies. Initial meetings were held to request assistance from State and Federal agencies, including the EPA and to set procedures for coordination and accomplishment of various tasks. Immediate response actions to save lives and meet basic human needs took precedence over other considerations, such as characterizing the site's environmental conditions. Further complicating the situation was the fact that the area was treated as a crime scene, with law enforcement authorities strictly limiting access for agencies such as the EPA for only a few days. EPA access to the site was impeded for only the first day or two.

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Excerpts from Chapter 3 of the Draft Report

Initial Actions Taken by New York City and EPA

In the immediate aftermath of the disaster, EPA undertook several activities to address various issues related to indoor air. However, according to EPA documentation, New York City officials stated on September 30, 2001, that the City would not be requesting assistance from EPA regarding residential sampling or reoccupation issues, or roof debris cleanup. According to EPA Region 2 officials, since the City declined EPA's offer of assistance on cleaning issues, EPA did not want to force itself into a lead agency role. Further, EPA Region 2 officials told us that a more assertive stance from EPA would have caused a level of confrontation that might have been counterproductive to the overall effort. This view of circumstances by EPA is contradicted by information provided by New York City agencies. City officials stated that they requested assistance from EPA with respect to air sample monitoring on September 11, 2001. Furthermore, City officials stated that the EPA was thoroughly involved and integrated into the health and safety process concerning the response to the terrorist attacks. For example, EPA chaired the health and safety meetings for the site. EPA was provided and reviewed and commented concerning the health and safety plan for the site. EPA provided the HEPA vacuum trucks to clean the streets in the vicinity of the site. In the City's view, EPA was a full and equal partner concerning environmental issues with respect to the response to the terrorist attacks. Consequently, if EPA had offered assistance it would have been accepted. Moreover, EPA's taking a more assertive stance would not have caused a level of confrontation that would have been counterproductive as the City recognized that the EPA is the lead agency under ESF-10. City officials do not recall that the subject of residential sampling and reoccupation and roof debris cleanup was raised by the EPA on September 30, 2001, or any time before then. City officials recall discussing the issue of indoor cleaning of residences with EPA at some time after September 30, 2001 and that EPA's response was that they would conduct a study and provide information to the City in six to nine months.

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New York City's Initial Response to Indoor Contamination

After consultation with FEMA and with the agreement of the EPA New York City officials held building owners responsible for cleaning up their own buildings, including

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interiors and exteriors. This was as a result of an initial positioin by FEMA that pursuant to the Stafford Act, which governs federal disaster relief activities, it would not reimburse the City for such cleaning. In general, landlords of rental units were responsible for assessing, and if necessary, cleaning apartment walls, ceilings, and floors; common areas, such as hallways and lobbies; and heating, ventilation, and air conditioning (HVAC) systems. Renters were responsible for cleaning their personal belongings. In the case of resident-owned condominiums, residents were responsible for cleaning their units, while building owners were responsible for cleaning common areas and HVAC systems.

and based on ^{those} ~~these~~ ^{assessments} finding
take the appropriate ^{cleaning} ~~action~~

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Table 3-1 notes three key instructions New York City provided to building owners and residents regarding the potential for indoor contamination resulting from the collapse of the WTC towers and steps for cleaning the indoor contamination:

Table 3-1: Actions by New York City

Date	Key Statement
09-16-01	The New York City Department of Environmental Protection (NYCDEP) issued a "Public Notice" flyer to building owners that discussed building maintenance issues. The notice stated that building owners/managers should have possible contamination problems reviewed by competent professionals. NYCDEP officials said the notice was not mailed <u>as mail was not being delivered in the affected area.</u> <u>The notice was also not included in any newspaper as there were numerous press releases and press briefings concerning the subject.</u> Information was also published on the NYCDEP website concerning this topic. The notice was however, delivered by NYCDEP inspectors, who went building to building in the affected area to deliver the notice to a responsible person. City officials believed that this method would insure the widest possible dissemination of the notice. These notices were also distributed at Disaster Assistance Service Center at Wall Street. Finally, NYCDEP established and publicized a special 24-hour hotline for questions concerning building maintenance issues, but was distributed by hand in Lower Manhattan by NYCDEP inspectors (see Appendix M for a copy of the notice)
09-17-01	NYCDOH issued a press release that recommended that individuals reentering their residences and places of work remove dust by using a wet rag or wet mop, and vacuum with a HEPA (high efficiency particulate air) filtration vacuum. If a HEPA vacuum was not available, the press release recommended using HEPA bags or dust allergen bags with a regular vacuum cleaner. <u>The procedures in this press release were included in the EPA website concerning the World Trade Center attacks.</u> (see Appendix N for a copy of the press release).

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Re Business info center at 110 N. 4th St
in addition to DEP website Help line

via a link with DoH website

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Date	Key Statement
10-25-01	NYCDEP described benchmarks and guidelines used to evaluate environmental conditions in a letter to Lower Manhattan residents dated October 25. In regard to cleaning indoor spaces the letter stated: "If more than 1 percent asbestos was found and testing and cleaning was necessary, it had to be performed by certified personnel." In addition, the statement indicated landlords should not reopen any building until a competent professional had properly inspected their building. The City's Asbestos Abatement Program requires that building owners file a written notification with the NYCDEP for asbestos abatement projects that do not require plan or permit approval from the City's Buildings Department. NYCDEP officials told us this notification applied to buildings owners who found more than 1 percent asbestos in <u>bulk sample</u> the dust in their buildings (see Appendix O for a copy of the instructions).

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NYCDEP officials told us that there is no statutory authority to ~~they did not~~ conduct a certification program to determine the level of compliance with their instructions ~~regarding the testing and cleaning of asbestos inside buildings.~~ This is a purely voluntary program. In January and February 2002, NYCDEP contacted building owners by express mail and asked them to file reports. This was followed up by a second mailing and by visits, but not inspections, by inspectors to building owners, who had not responded. However, the only authority to conduct inspections of buildings is if a complaint is made, or if the building owner reports that a bulk sample was found containing more than 1% asbestos. NYCDEP received over 300 complaints with respect to asbestos inside buildings and conducted inspections ~~concerning every complaint.~~ In conducting over 300 inspections, NYCDEP found only 1 case where a bulk sample exceeded 1% asbestos. There were 37 instances, pursuant to the Asbestos Control Program, where building owners reported bulk sample levels of 1% or more asbestos. Inspections were conducted in every instance and the inspections found levels of 1% or greater in only ~~cases.~~ Beginning in September 2001, City officials along with EPA officials, they said they began visually inspecting the exteriors of over 1,000 buildings and identified 324-323 buildings with visible dust. NYCDEP officials told us that 90-102 of these 324-323 building exteriors were subsequently cleaned by the building owners and the remaining owners stated they could not afford to clean their buildings. These remaining buildings were cleaned by contractors hired by NYCDEP. ~~owners were eligible to have their buildings cleaned by NYCDEP with funding provided by FEMA.~~

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In order to determine the extent of indoor contamination in Lower Manhattan residences, the NYCDOH and ATSDR initiated an indoor air study in November 2001. The sampling phase was completed in December 2001, and the final report was issued by

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Begin in late Sept 2001

ATSDR in September 2002. The results of this study are discussed later in this chapter on page xx.

[Evaluator's Note: a DEP "Public Notice" about WTC, dated September 16, 2001, is included in its entirety as an exhibit to the draft report.]

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SURVEY FOUND RESIDENTS WANTED MORE AIR QUALITY INFORMATION AND DID NOT USE RECOMMENDED CLEANING PROCEDURES

From October 25 through November 1, 2001, NYCDOH conducted a door-to-door survey of residents in Lower Manhattan's Battery Park City, Southbridge Towers, and Independence Plaza. All of these neighborhoods were in close proximity to the WTC towers. A representative sample of apartments from each of these three areas was selected and a total of 414 interviews were conducted. Despite the enormous amount of publicity and information concerning air quality provided to residents by the media, and City, State and Federal agencies and attempts by the City and EPA to widely disseminate information concerning indoor cleaning of residences ~~the~~ survey reached two conclusions related to air quality:

- a. Residents of Lower Manhattan were worried about their health and safety. There was a tremendous concern about the air quality and its potential effects on health. The high proportion of the population experiencing symptoms likely to be related to respiratory irritants contributed to this concern.
- b. The majority of households had not been cleaned to recommendations, possibly increasing the exposure to respiratory irritants. Specifically, in regard to air quality information, the report noted that:

The topics of most interest to this population related to air quality, its safety and its effect on the physical health of both adults and children (70% said they wanted more information about air quality). There is a need for more information regarding the potential risks from exposure to the dust and debris that continues to be emitted from the WTC site. Related to this topic, 35% of the respondents reported that they needed more information regarding cleaning.

The report noted that only 40 percent of the residents reported cleaning their homes according to the recommended methods of wet mopping hard surfaces and using HEPA vacuums on carpeting. The study did not report whether residents wore air purifying respirators when cleaning their apartments, ~~a precaution not recommended in early government communications but one that experts we contacted said should have been recommended.~~¹

The report noted two limitations on its results. First, the survey only included three selected neighborhoods in Lower Manhattan and did not include residents who had not re-occupied their apartments at the time of the survey. Second, the report noted that normally respiratory symptoms increase during the time of year the survey was conducted.

¹ The issue of whether residents should wear respiratory protection when cleaning their apartments was discussed at various meetings attended by New York City officials, EPA officials and officials from the National Institute for Occupational and Safety Health. At no time prior to providing guidance to residents or while the cleaning process was in progress did any official or expert suggest that residents should take the precaution of wearing respiratory protection. However, in preparing this report, experts contacted by the EPA now believe that this precaution should have been recommended.

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[Evaluator's Note: a DOH press release about WTC, dated September 17, 2001, is included in its entirety as an exhibit to the draft report.]

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