[Senate Hearing 107-524, Part I]
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AIR QUALITY IN NEW YORK CITY AFTER THE SEPTEMBER 11, 2001 ATTACKS

FIELD HEARING

BEFORE THE

SUBCOMMITTEE ON CLEAN AIR, WETLANDS, AND CLIMATE CHANGE

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDRED SEVENTH CONGRESS

SECOND SESSION

ON

AIR QUALITY IN NEW YORK CITY AFTER THE SEPTEMBER 11, 2001 ATTACKS

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FEBRUARY 11, 2002--NEW YORK CITY

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AIR QUALITY IN NEW YORK CITY AFTER THE SEPTEMBER 11, 2001 ATTACKS

MONDAY, FEBRUARY 11, 2002

U.S. Senate,
Committee on Environment and Public Works,
Subcommittee on Clean Air, Wetlands,
and Climate Change,
New York, NY.

The subcommittee met, pursuant to notice, at 9:30 a.m. at the Alexander Hamilton U.S. Customs House, One Bowling Green, New York, NY, Hon. Joseph Lieberman (chairman of the subcommittee) presiding.

Present: Senators Lieberman and Clinton.

Also present: Congressman Nadler.

OPENING STATEMENT OF HON. JOSEPH I. LIEBERMAN, U.S. SENATOR FROM THE STATE OF CONNECTICUT

Senator Lieberman. Good morning. As people are coming in, let me--I know there's a security screening which is delaying some folks, so why don't we begin because we have a full morning and a number of witnesses. I would ask the folks who are here to try to take their seats.

Senator Clinton and I will make our opening statements, then we'll go to Congressman Nadler as the first witness.

I want to call this hearing of the Senate Subcommittee on Clean Air to order. I want to begin by thanking Senator Clinton for her leadership on this problem. The fact is that this subcommittee hearing would not be occurring here this morning, were it not for Senator Clinton's concerns and for her advocacy.

Five months ago today, just blocks from this site, tragedy struck this Nation and this city like never before. This great city particularly, the center of so much life and energy and the place where so many American dreams have been born and realized, was struck at its heart. The terrible images of that day will forever be seared into our souls and into our psyches.

Now as we work together to ensure that such an attack never happens again, we know that we will never forget the 3,000 loved ones and fellow citizens we lost, nor will we ever cease to be inspired by their lives or by the lives of the rescue workers whose heroism has rewritten the word for this new century. The consequences of that day to our society, our culture and our Government are great, and they seem to be growing every day.

But today we've gathered to discuss a particular problem: the public health consequences of the attacks on the World Trade Center for the men and women who live and work here and for the children who go to school here. Especially for the workers whose tireless efforts in the cleanup and recovery of the site have reminded so many of us of what's best in America.

We return to the scene of the crime, a horrific war crime, to examine its consequences, continuing consequences, on the people of New York City. Because the fact is that we cannot allow the lingering consequences of September 11th to do any more damage to the health and well-being of the people of New York. When those two towers tumbled down, they brought tons and tons of building materials with them, releasing large quantities of dangerous chemicals into the air.

I know that there are serious concerns about the level of asbestos and benzene and heavy metals at and around the site. Workers at Ground Zero, from firefighters to police officers, to the construction workers and the sanitation workers and so many others, have reported respiratory ailments, mostly complaining of the newly-named ``World Trade Center cough.'' According to the Firefighters Union, nearly 750 firefighters have taken medical leave since the cleanup began.

The air conditions in the surrounding neighborhood also have raised the community's anxiety. With private studies sometimes contradicting the Government, people don't know what to believe. I know there was a survey in October of local residents and nearly 35 percent said they did not feel that their homes were safe to live in, and about 80 percent wanted more information about their neighborhood's air quality. Parents of school children are understandably the most concerned, with the parents of some children apparently refusing to send their kids to school in the vicinity of Ground Zero.

If this great part of this great city is to begin to get back to normal, this situation has got to be clarified and resolved. That is why Senator Clinton asked me to convene this hearing today and why we are here to hear your testimony. We want to get to the truth as best we can to find out the answers to some of the questions that are on the minds of so many New Yorkers and so many others who have spent time at or around Ground Zero. Questions like what level of what contaminants were detected and where, to what were workers on the pile exposed, to what were people in the streets exposed? Are there still hazards in places of work or places of residence or places of education?

We also want to find out how our Government responded on that fateful day and thereafter. There's no debate that the overall response of Government was and has continued to be excellent. It's certainly not our intent to re-enact or second-guess every decision made in what were some of the most difficult circumstances imaginable.

But as we go forward as a Nation in the struggle against terrorism, it is our obligation to learn as much as we possibly can about the lingering consequences of the attack on New York on September 11th. It is in that spirit that we're here today.

I know there's been confusion in the press and the public about which Agency, which level of government has been responsible for what part of the air quality monitoring. That's a question we're going to ask, too, because our citizens need to know who's responsible. Accountability starts with cleaner lines of authority, and we need to clarify how our Government has organized its response to this part, this lingering part of the attack.

Representatives of the agencies before us were on the site 5 months ago today, anticipating many of the air quality problems and working to evaluate them. This morning, we're going to assess what has been learned and consider what can be done to address the gaps and overlaps and occasional contradictions in the reporting of that data.

Finally, we've got to ensure that we do everything we can to get the necessary help to those who may have been exposed to

hazards in the course of this experience. We've got to locate, register and monitor the people who might have been exposed, especially the heroic first responders, who plunged into the danger onto the pile with no regard for what toxins might lurk in the rubble, not to mention the air. This includes of course all those from New York, but all those from outside who rushed here to be of help.

As we continue to move forward from September 11th as a Nation with remarkable unity and resolve to root out those who did this to us, we cannot let its aftermath damage you or us any more through the air you have inhaled or continue to inhale.

This morning, we've got a very knowledgeable and diverse group of witnesses who can help to educate us and all New Yorkers about these pressing questions. I hope when we leave here today everyone in the room, including the U.S. Senate, as represented by Senator Clinton and me, will have a clearer understanding based on the facts of what is and is not unsafe in the air, and what we together can do to protect the health and safety of the people of New York.

I want to again thank Senator Clinton and say to you, I've known Senator Clinton for more than a few years, from her time at law school in my home city of New Haven. I'm not going to mention the years, she remains remarkably youthful and vital. She has been an extraordinary addition to the U.S. Senate, obviously very bright, extremely able, but has worked tirelessly and very effectively on behalf of the people of New York, really from the beginning of her service in January 2001, but powerfully and passionately since September 11th.

I'm honored to be here at her request and proud to introduce her to you now.

OPENING STATEMENT OF HON. HILLARY RODHAM CLINTON, U.S. SENATOR FROM THE STATE OF NEW YORK

Senator Clinton. Thank you so much, Chairman Lieberman.

Thank you for convening this hearing, which as you so well explained, will help us answer questions, will help us determine what we don't know, so that we can ask the right questions, do the research that's needed, and most importantly, ensure that we're doing everything possible to care for the health of our residents, our workers, our children, our first responders and everyone who has been directly and indirectly affected by the disastrous events just 5 months ago today.

We're very fortunate to have our neighbor and our friend, Senator Lieberman with us today. He's not only the chairman of this Subcommittee on Clean Air that has jurisdiction over these issues, but he is a statesman and someone whom I admire and have for all those decades that we've known each other. It's a great honor for me to welcome him to the Alexander Hamilton U.S. Customs House for another piece of American history with this Senate hearing.

There are many important individuals and groups who will be testifying today, but I'm very well aware that there are many others who could not be fit into the context of a Senate hearing. I want to encourage all of you to submit written testimony, either by giving it to us today or by sending it to

the committee. There is information posted about how to do that. Because we know, just looking at this audience, that there are many of you who have very specific concerns and questions. Some I'm sure will be addressed by all of the witnesses this morning, but others may not.

We want to hear from you. We'll be continuing to pursue this issue. Because as Chairman Lieberman says, ``what we want to do is know what the Federal Government's response was and should be.'' I for one am not ready to point fingers at anyone. I think that the work and the response of September 11th and in the weeks following was heroic, was absolutely inspiring, and everyone was working as hard as they could to deal first with the rescue mission and then with recovery.

But clearly, since this had not occurred ever in our history, and there had never been the collapse of such enormous buildings with all that that means in terms of the materials that were within them and their dispersal into the air and into the ground, this was a new experience, a terrible, horrific one that all of us have to learn from.

The purpose of today's hearing is really three-fold. What we want to do is first find out what we know about the quality of air at and around Ground Zero and any related health impacts. Second, find out and be honest about what we don't know. There are questions we can't answer. It's frustrating and concerning to all of us, particularly those who live or work in the vicinity. But let's just put them on the table, and then, let's have a plan of action about what we're going to do. Not only to answer those unanswered questions insofar as possible, but to do everything we can to improve air quality, right now, going forward, and to protect the health of the people that live, work, attend school and generally call Lower Manhattan home.

I certainly don't think any of us have all the answers. The information that has been made available to us and that I have been monitoring since September 11th based on the experts, both in the private and public sectors, appears reasonably to indicate that the outdoor air quality around the World Trade Center site, not at the specific site, the so-called pile or Ground Zero, but around the site is generally meeting standards and has improved since the first few weeks following the attack.

Now, while the outdoor air quality in the general area seems to have improved and to be acceptable, there definitely was and still is cause for concern at the site, at Ground Zero. It is imperative that the people who have worked there and are working there still have been supplied with and trained to use the proper protective gear and that they actually use it, and that they seek care when they are experiencing any symptoms, such as the so-called ``World Trade Center cough.''

I think it's also clear that people have been confused by the information provided by officials. Sometimes it didn't match up with the personal experience that people were having. It just didn't make sense. There has been conflicting information almost continually from different sources, which has certainly added to the confusion and concern. One of my hopes is that we will create a system that will try to at least eliminate the confusion insofar as possible.

But as little as we know and can agree upon, there is much that still remains in question. The long-term health impacts of exposure to air pollutants at and around Ground Zero is simply not yet known or certain. The information made available thus far seems to indicate that the risk of long-term health impacts to the general public, people who live and work in Lower Manhattan, is very low. But we don't know for sure. There is definite and very much warranted concern for the short- and long-term health of those who worked directly at Ground Zero.

There are also risks related to the dust and residue found inside buildings, which can be or has been airborne. This has to be appropriately addressed and we will be discussing that. It appears uncertain whether all of the buildings around Ground Zero have been adequately cleaned. Certainly some have been, and have met the available standards. Others raise questions about what was done and how well the cleanup complies.

Now, even though this is something that is unprecedented to all of us, that cannot be an excuse for not acting at the highest standards to do everything possible to meet the concerns that people have. I would like to propose, and will ask the witnesses to respond as we go through the day, five general actions that I think could help.

First, I would like to urge Congress to pass and the President to sign S. 1621, which is a bill I introduced and which this committee passed early in November, that would authorize a health monitoring program for all community members, volunteers and workers in a disaster area when there has been exposure to harmful substances.

Second, we need to immediately establish and fund a comprehensive long-term environmental health registry, referral, surveillance and education system for the World Trade Center disaster. This should be included in the Federal budget that is currently being debated in the Congress. There are a number of efforts that have been started in this regard, but we need an overarching program to pull this together and to continue it for 20 to 30 years. Because I think we owe it to our firefighters, our police officers, construction workers and others who are most at risk that we follow them for however many years it takes, and treat them for anything that might be discovered.

Third, I believe we should address the continuing unknowns regarding indoor air by establishing a World Trade Center indoor air program. This should be a joint Federal-city effort that will expand on existing indoor air quality testing and monitoring and make the information available to the public in real time. I'm concerned that some testing was done that wasn't always immediately made public, and I don't think that that builds the kind of confidence that we should have in the information we're receiving. I look forward to working with the city on this initiative.

Fourth, while we continue to clean up from September 11th, we should make sure we don't add to our air quality concerns. There should be a clean air initiative at the site to do everything possible to keep under control the emissions from the construction equipment being used. I've heard from a number of residents that they are concerned by all the diesel trucks that are lined up that have their motors running all day. I

think we could take some steps that would help to eliminate some of the emissions and allay some of the concerns. I encourage the State to work with us on that.

Finally, I think we need to capture the lessons we've learned from this experience, incorporate them into a new emergency protocol for environmental health that identifies pollutants to be measured in the aftermath of a disaster, and that establishes health-based standards to be used and sets uniform sampling and testing methods. Then, tell us what we need to do if the standards, based on the uniform testing, reveals that the standards are not being met. I think this should be a part of the Administration's homeland security initiative and I know that this committee stands ready to work with Governor Ridge's office on that important issue.

Finally, Mr. Chairman, I want to just include in the record a short statement of Senator Voinovich. I want to just read a paragraph from it, because I think it illustrates that although this is principally a New York issue, and those who live and work in the region, there were many, as you said in your remarks, who came from all over the country. Senator Voinovich from Ohio is very concerned, because after Ohio Task Force One returned home, those were the first responders sent in by FEMA to work with our firefighters, police and emergency responders, many of them experienced illnesses apparently caused by work at Ground Zero.

Thirty-seven of the seventy-four emergency responders became ill. Three people were hospitalized with viral pneumonia, eight people experienced extreme weight loss, two people have been diagnosed with adult onset asthma, one with acute bronchitis, and the rest with various respiratory disorders and rashes. Senator Voinovich expresses his concern that no Federal Agency is monitoring these workers for health problems. Clearly, the Federal Government owes them the duty to inform of their health risks and to ensure that they receive the best medical care while safeguarding their individual privacy. That's clearly something that we agree with and hope that we're going to be able to come up with some solutions to some of these issues.

Again, Mr. Chairman, thank you so much for coming to this historic site to hold this historic hearing.

[The prepared statement of Senator Voinovich follows:]

Statement of Senator George Voinovich, U.S. Senator from the State of Ohio

Mr. Chairman, thank you for holding today's hearing on the air quality and health impacts of the September 11th attack on the World Trade Center. I would also like to especially thank Senator Clinton for bringing this important issue to my attention and the attention of this subcommittee and the U.S. Senate.

As I said on September 11th, our first responsibility is to secure the support the victims and their families will need in the days and the months ahead and pray that God will bless and comfort them. Today part of that support is to ensure that those who work, live and attend school in the area are safe and are not exposed to situations which put their health at risk.

In addition, we have a very important responsibility to the emergency responders and the thousands of workers and volunteers who have dealt with the ongoing tragedy at Ground Zero everyday since

September 11th. Our Nation owes these brave men and women our gratitude and our thanks. Many of the workers left their families for days and weeks at a time, working long difficult hours, at emotionally difficult tasks most Americans can not image. When I toured Ground Zero shortly after the attack, I was struck with the dedication and hard work of all of the volunteers and the fact that the television coverage did not do justice to the devastation that I saw.

The bravery, professionalism, and sacrifice of the men and women of the New York Fire and Police Departments and other emergency workers is an inspiration to us all. These men and women are true heros in every sense of the word. While all of New York and America should be proud of the quick response of the New York rescue workers, we all should be equally proud of the volunteers from across the country who responded to the call for help. I am particularly proud of the 74 members of Ohio Task Force One who were mobilized on September 11th and were among the first out-of-state FEMA teams to respond to the site, where they worked until September 20.

I am also proud of the Federal response to the tragedy by FEMA and the other Federal agencies. I think it is important as we evaluate the Federal response, in order to make improvements in the system, that we do not lose sight of the fact that the terrorism attack on September 11th was unprecedented in size, scale, and devastation. Nevertheless, some mistakes were inevitable and we must learn from them.

I am particularly concerned about the health problems of the emergency responders and what they were exposed to during their work at Ground Zero. Equally disturbing is the breakdown by the Federal Government in monitoring the health problems and treatments of the out-of-state FEMA volunteers following their work at Ground Zero.

After Ohio Task Force One returned home, many of them experienced illnesses apparently caused work at Ground Zero. Thirty-seven of the seventy-four emergency responders became ill, three people were hospitalized with viral pneumonia, eight people experienced extreme weight loss, two people have been diagnosed with adult onset asthma, one with acute bronchitis and the rest with various respiratory disorders and rashes. This data was supplied to me by Robert Hessinger, the logistics chief for Ohio Task Force One.

I was concerned, and I remain concerned, that no Federal Agency is monitoring these workers for health problems. The workers themselves are concerned because they do not know what they may have been exposed to during their work in New York. The only information they have received since returning to Ohio is from what they have read in the newspapers about potential exposure to asbestos. This is not acceptable. If these people are going to leave their families and jobs and risk their lives and health, then the Federal Government owes them the duty to inform them of their health risks and to ensure that they receive the best medical care, while at the same time safeguarding their individual privacy.

The entire FEMA response effort depends upon the willingness of volunteers pitching in from around the country. If we do not treat these volunteers with the respect they are due, then we will have a difficult time convincing people to volunteer for disasters in the future. Mr. Chairman, I look forward to working with you and Senator Clinton and others members of the subcommittee to ensure that all of the emergency responders and the residents of New York City get the most reliable health information and answers to their questions and concerns.

Thank you.

Senator Lieberman. Thank you, Senator Clinton, for a very thoughtful statement and a very substantive five-point program of response which I look forward to working with you on. That first measure that you sponsored last fall, S. 1621, to provide for health monitoring, we did report out of the committee. I believe it's still on the Floor, and I hope we can get our colleagues in the Senate to move it quickly.

Your statement and your program make the point that I think is why we're here, which is that the response of the emergency workers and the construction workers and everyone else set a standard for the rest of the country. We hope and pray that America will never have an other incident like this, but in a real world, we cannot assume that that will not be so.

Just as a standard was set by the first responders and those who continue to work to clean up at the site and to find and search for survivors, we've got to be persistent enough, and your leadership is going to make this so, to stay in there with the people who live here, who have worked at the site, who continue to work in the neighborhood, children who go to school here, to make sure that we also set a standard which judges and protects against the lingering consequences of these awful attacks.

So with that in mind, I thank you and I now call our first witness, who is our colleague and friend, Congressman Jerry Nadler.

STATEMENT OF HON. JERROLD NADLER, U.S. REPRESENTATIVE FROM THE STATE OF NEW YORK

Mr. Nadler. Good morning. Thank you, Chairman Lieberman, and thank you, Senator Clinton. I'd like to thank you for holding this field hearing today and for inviting me to testify regarding the continuing impact of the September 11th attacks on the air quality in Lower Manhattan.

As the Congressman representing Ground Zero and the surrounding area, I am deeply concerned about the environmental and health effects posed by the collapse of the World Trade Center for my constituents and for those who go to school or work in the area. It has now been exactly 5 months since the terrorist attacks. Unfortunately, the people in Lower Manhattan still do not know whether or not it is safe to live and work in the area.

Although the first responders and the emergency personnel did excellent work, the (EPA) Environmental Protection Agency, has failed in its mission to ``protect human health and to safeguard the national environment'' by not exercising its full authority to test and clean indoor spaces where people live and work. As such, EPA has created what can only become a full-scale crisis of public confidence.

Yet all is not lost. The EPA can and must act now to remedy the situation and to make Lower Manhattan safe and to restore public trust. Despite statements to the contrary, the Agency does currently have the authority and resources to do so, and it must do so quickly. If the EPA continues to fail New Yorkers, we will have to introduce legislation to mandate action.

I'm going to begin by being very blunt. We now know enough to be alarmed and outraged at the Federal Government's response to the environmental impact of September 11th. First, we know that EPA Administrator Christine Todd Whitman misled the public on September 18, 2001, when she said she was ``glad to reassure the people of New York that their air is safe to breathe and their water is safe to drink.'' She made that statement without the indoor data necessary, without any indoor testing having been done, to make such a pronouncement.

Second, we know that the EPA has made a series of conflicting comments about the presence and quality of hazardous materials and has even knowingly withheld critical data regarding the causticity of the dust.

Third, we know that the EPA delegated authority to New York City to handle indoor environments, but did nothing to assure that the city's response was adequate or appropriate. This left New Yorkers to their own uninformed devices, often without the means to take care of themselves and their families. This is true even as the EPA had its own building at 290 Broadway professionally tested and cleaned.

Finally, we know that the EPA has treated New York differently than it has treated other locales contaminated by hazardous materials. New York was at the center of one of the most calamitous events in American history, and the EPA has essentially walked away. Ms. Whitman's statement reassuring the public about the safety of air and water was based only on the EPA's outdoor tests, the results of which are still in dispute. At that time, there had been no systematic testing of indoor air or dust in residential or commercial buildings by any Government Agency, let alone by the EPA.

Ironically, the very first public testing conducted inside residences, which was commissioned by the Ground Zero Elected Official Task Force, which I formed, commenced on the very day Ms. Whitman made her misleading statement. The results were made available to the EPA on October 12. The test results showed elevated levels of a number of hazardous materials in many of these residences. The EPA did nothing and Ms. Whitman did not clarify her statement.

In recent weeks, the EPA has stated repeatedly that the city of New York, not the EPA, is responsible for indoor testing. The city, however, didn't get around to testing inside homes until November or December. The full results of these tests are still not available, and according to the Health Department, won't be available until the spring.

I do not understand why the results of tests undertaken by a public agency are being delayed for public release. Our test results, the ones that the Task Force commissioned, were available for public release in less than a month.

Nevertheless, just 3 days ago, I assume in anticipation of these hearings, the city Department of Health issued a press release regarding this limited indoor testing. Despite a pacifying headline, the limited data in the press release has caused a scientist with whom we've consulted to believe that full results will directly contradict Ms. Whitman's statement about the safety of the air, at least as regards the indoor air.

The release does make it clear, as did our commissioned

study, that there were disconcerting levels of hazardous materials in people's apartments. Ms. Whitman's reassurances are deeply confusing in light of other statements made by agency officials and of other information we now have that EPA has not itself released. For example, in a January 25 speech by Walter Mugdan, EPA Region 2 counsel, he states, ``A significant number of the WTC bulk dust samples that we analyzed did have more than 1 percent asbestos.''

An October 3, 2001 EPA memo, ``Confirm[ing] No Significant Public Health Risk'' states, ``The majority of EPA and OSHA samples of air and dust analyzed for asbestos have been at levels that post no significant risk to residents and workers returning to their homes or area businesses.'' Now, that of course is misleading. Because that may be the majority, but that means the minority in plenty of places did find significant risk.

This statement has been made repeatedly by EPA Region II officials. How are New Yorkers to interpret these conflicting remarks? I can't even tell you what they mean, except that they cannot both be true.

Confusing remarks are one thing, withholding critical data pertaining to the public health is another. We know that it took a Freedom of Information Act request by the New York Environmental Law and Justice Project to get test results showing dangerous levels of hazardous materials in outdoor ambient air. The EPA claimed that this was an oversight.

But now we have new, frightening information. According to yesterday's St. Louis Post Dispatch, the U.S. Geological Survey, using the country's best detection equipment and methods, found pH levels in World Trade Center dust that are ``as corrosive as drain cleaner,'' and passed this information along to health experts at the EPA on a Government-only website.

It took less than 2 weeks in September for these test results to be ready. But they weren't revealed until the St. Louis Post Dispatch yesterday. I submit this article for the record.

Senator Lieberman. Without objection, the article will be received.

Mr. Nadler. Andrew Schneider, the paper's Pulitzer prize winning environmental journalist, charges ``the USGS data was not released by the EPA nor apparently were the environmental agency's own test results on the dust.'' The EPA claims to have released this data to the public, but when Schneider reviewed all of the EPA's statements made since September 11th, he found nothing that warned of these high pH levels.

According to the New York Committee for Occupational Safety and Health, such dust, ``once it's in contact with moist tissue, the throat, the mouth, the nasal passages, the eyes and even sweaty skin, it becomes corrosive and can cause severe burns.'' This is utterly scandalous. We must determine why the EPA hid this information from the public, and we must see all the data now. I hope that the two Senators will join me in calling on the Federal Government to explain why New Yorkers were misled, and to demand the immediate release of the full complement of data.

The EPA has not only provided false reassurances and

misleading information, the EPA has also abrogated its responsibility to act. In a statement issued on January 17 in response to charges at a press conference that I held, the EPA states that it ``has led the effort to monitor the outdoor environment, while the city of New York has taken the lead regarding the reoccupancy of buildings.'' At least the EPA admits that it has in effect delegated authority to the city.

Unfortunately, the EPA has yet to provide any justification for doing so, nor has it provided any evidence that it has taken any of the oversight measures the law compels it to take to assure that the city is acting in accordance with strict Federal standards. On January 23, I sent a formal inquiry to Administrator Whitman asking for answers to these and other questions about the city's response, which I submit for the record today. It has been over 3 weeks since the letter was sent, and I have yet to get a response.

Senator Lieberman. Without objection, so ordered.

Mr. Nadler. The EPA might say today, as it has in the past, that it does not have the proper legal authority to take the steps we are requesting to test and clean the areas affected by the collapse of the World Trade Center. It will probably say that the Clean Air Act, for example, does not govern indoor air, and that it is therefore the responsibility of the local and State governments, or even that of the landlords and residents themselves. This is again all utterly misleading.

Under Section 303 of the Clean Air Act, the EPA has the authority in an emergency situation to protect human health when there is ``an imminent and substantial endangerment'' presented by a source of pollution. The intent of Congress is clear in this regard. A Senate report from 1970 on Section 303 states, ``The levels of concentration of air pollution agents or combinations of agents which substantially endanger health are levels which should never be reached in any community. When the prediction can reasonably be made that such elevated levels could be reached even for a short period of time, that is that they are imminent, an emergency action plan should be implemented.''

In short, the EPA should not wait for people to actually get sick before it acts, and it clearly has the authority to act under Section 303. Indeed, an EPA memo entitled, ``Guidance on the Use of Section 303 of the Clean Air Act'' was issued to the regional offices on September 15, 1983, outlining these very points. I submit a copy of this memo for the record.

Senator Lieberman. Without objection, so ordered.

Mr. Nadler. The Clean Air Act is not the only governing statute. The EPA has the authority to act on indoor air under the National Contingency Plan of the Comprehensive Environmental Response, Compensation and Liability Act. In fact, I understand the EPA has indeed been utilizing some of the NCP, National Contingency Plan, protocols at Ground Zero. However, they have not relied on this authority or any other to test or remediate indoor environments.

As we speak, the EPA is in fact doing indoor testing and remediation in Herculaneum, MO, and other locales, which are not, by the way, Superfund sites. We must learn why the EPA is treating New York differently. I ask the Senators present here today to help me find out. This double standard is

unconscionable.

The EPA was unwilling to act on its own, and yet did nothing to ensure that those ostensibly charged with acting did the right thing. The EPA on its website and in public press releases referred residents to the New York City Department of Health, which recommended that people clean their potentially asbestos laden dust with a ``wet rag or wet mop.'' Clearly, such cleanup measures are inadequate.

We know that the law requires proper remediation of asbestos sites, not with a wet rag or a wet mop. The EPA's own actions show this to be the case as the actions they took in cleaning their own building at 290 Broadway. I today, again ask, why the EPA applied stricter measures to Federal buildings than the city advice for local residences and businesses equidistant from the World Trade Center?

Given the lack of action, credible information or oversight, I believe the EPA has failed in its responsibility to protect the public health of the citizens of Lower Manhattan. This is quite shameful, for public health is the first thing we as a Government must protect.

In order to assure a full and fair public assessment on the EPA's actions following September 11th, I have also asked the EPA National Ombudsman, Robert Martin, to investigate these matters. Mr. Martin has been doing so, and I am disappointed he did not have the opportunity to share the status of that investigation with the committee. However, I understand the sharp time constraint today, so I have attached a statement from Mr. Martin to be included in the record.

Senator Lieberman. Without objection, so ordered.

Mr. Nadler. As you may also know, Administrator Whitman is attempting to place the Office of the Ombudsman under the control of the Inspector General of the EPA, effectively stripping the Ombudsman of his independence and ability to investigate these and other claims. I sincerely hope that Administrator Whitman will stop her request to eviscerate the Office of the Ombudsman, and in doing so, further undermining the integrity of her agency. I also hope that Congress will do so if she doesn't.

I realize that I have leveled serious charges here today. I believe I have the moral responsibility to do so. The salient point is that we still do not know the extent of the presence of hazardous materials in some areas of the city, especially in indoor areas. It may or may not be dangerous in many indoor areas of Lower Manhattan, we just do not know.

I am dismayed that there seems to be an unwillingness on the part of our public agencies to get this information. But given that we do not have all of the facts, we cannot conclude anything. I do know that we must get the facts and act swiftly and appropriately to get the job done right. We must not fall into the catch-22 of saying there is no evidence of a public health emergency without taking any steps to get such evidence.

The burden should not be on the landlords and residents themselves when the testing procedures and cleanup measures are expensive and must be conducted by properly trained personnel. The EPA has the statutory and regulatory authority to test and to remediate indoor environments in Lower Manhattan and has exercised such authority elsewhere.

I am calling on EPA today to immediately commence a program of full-scale testing and remediation using the best available technology, and to make a report of all such test results and actions available to the public. The EPA must also issue the test results in a manner which is tied directly to health standards, so that we can truly assess the public health risks posed to the people of Lower Manhattan.

Finally, testing procedures should in no way impede the expeditious remediation of hazardous materials found by other Government agencies or private researchers. Similarly, should the EPA find dangerous levels of hazardous materials before the full spectrum of testing is completed, cleanup measures should commence immediately.

If the EPA fails to act again, despite its current authority, I will introduce legislation to compel it to do so. People might say that the measures I am requesting here today are expensive. That may be, but we must protect the public health. Although the cost may be high today, imagine what the cost will be in the future if it turns out there really are dangerous levels of hazardous materials in Lower Manhattan, especially indoors.

By the way, when I say Lower Manhattan, this applies equally to Brooklyn, Jersey City and anywhere else that cloud went. All of these areas must be properly tested. Imagine the city's and EPA's contingent liability to lawsuits 20 years down the road and envision to potential health care costs. It is in the best interests of the residents, workers, students and businesses, for the Government to act swiftly and appropriately to address the public's environment and health concerns. We cannot afford to wait while all the agencies point fingers at each other. There is still time to right the situation.

Time is of the essence. My office has received numerous complaints from people experiencing adverse health effects, such as headaches, nosebleeds and respiratory ailments. The symptoms are so widespread they have been dubbed the World Trade Center flu. Public confidence is at stake. People know when they are sick, they know when something is not right, and they know when they are being lied to. I sincerely hope that we do not have another Love Canal on our hands. But the best way to avoid that is to do the necessary testing and cleanup now.

I again thank you for inviting me to testify before you today. I look forward to working with my colleagues in both chambers of Congress and with all interested parties to ensure that New York City is safe and prosperous for many years to come. I thank you.

Senator Lieberman. Thanks, Congressman Nadler. That was a characteristically direct, intelligent and passionate statement. I appreciate it very much. You framed the issues and issued a challenge as well as offering some solutions, which I think will guide us as we go on in this hearing for the rest of the morning.

Without objection, I'm going to include all the material you've referred to in the printed record of this hearing.

I thank you very much for your time, your advocacy and for a superb opening statement.

Mr. Nadler. Thank you.

Senator Clinton. I join in thanking the Congressman, and

especially for his leadership on the Ground Zero Elected Officials Task Force. We're including on the record, I hope that you'll just hand it to us, Jerry, because we want to be able to refer to your material as we go through this hearing. We will closely work together and make sure that the questions you raised are at the forefront of certainly the Senate's agenda as well.

Mr. Nadler. Thank you very much.

Senator Lieberman. Thanks, Congressman. See you in Washington.

Now we'll go to the second panel. I'll call them to the table. Liz Berger, who's a resident of the area; Dr. Kerry Kelly, chief medical officer of the New York City Fire Department; Dr. George Thurston, associate professor of Environmental Medicine at the New York University Medical School, Nelson Institute of Environmental Medicine; and Eric Goldstein, who's the New York Urban program director of the Natural Resources Defense Council.

I thank all of you for being here. You are either living through or examining and being advocates about the problems that we've talked about. So your initial testimony here is very important.

We're timing this to 3-minute opening statements, then we'll have questions. If you can't do it all in 3 minutes, we will not give you the proverbial hook, but try to keep it as concise as you can.

Ms. Berger, welcome, and we look forward to your testimony now.

STATEMENT OF ELIZABETH H. BERGER, RESIDENT, NEW YORK, NY

Ms. Berger. Thank you, Senator. I'm going to talk really fast. Chairman Lieberman, Senator Clinton, staff members, fellow panelists, neighbors, thank you for inviting me to tell you about the doubts, concerns and questions which have confronted downtown residents every day since September 11th. I've submitted more comprehensive testimony for the record, but I want you to know that we live in a time of deep uncertainty, but are required to make countless decisions that may affect our health and that of our children for decades to come.

I live 150 yards from Ground Zero. I have lived south of Fulton Street for more than 19 years. My husband and I remember life downtown before there was a single all night deli, and restaurants closed early Friday and didn't reopen until Monday lunch, and when the closest supermarkets were in New Jersey.

We loved being downtown. We loved the huge buildings on the narrow, winding streets. We loved being closed to the water, and we knew that in some powerful, visceral way, Manhattan was an island and that we were at the center and the beginning of everything.

For us, the World Trade Center was everything. It was our indoor play space, our back yard, our mall, our theater. It was where our kids flew their kites, where they went roller skating, where they learned to ride their bikes. It was the only place below Chamber Street where you could buy a decent loaf of bread. My children, who are 5 and 2, spent part of

every day of their lives at the World Trade Center.

This is why it is so absurd to heed the call to return to normal. There is no more normal for us. I saw the first plane before it hit. Our building was evacuated. It was 8 days before we knew that it was structurally sound, and another few weeks before we were assured that One Liberty wasn't going to fall on us. That entire time, I thought not of the apartment we were going to lose, but of the destruction of our community, of 20 years' work gone in 18 minutes.

The theme of my remarks is uncertainty. I never doubted that we would return. After the city recertified our building, I realized the question was not whether, but how. Because as you know, it is the city's job to certify for structural integrity, not for environmental safety.

We then began a great education process which has made downtown residents experts in products and services we never knew existed--FEMA, HEPA, OSHA. We all learned fairly quickly which were the best cleaning companies and testing companies, but what no one to this day can agree on is what clean means and how to measure it. It took eight guys in white suits and respirators 5 days to clean my apartment. But is it clean? Nobody tells you what to keep and what to toss.

In October, I attended a panel discussion at Cooper Union featuring leaders in the field of pediatric environmental health. I didn't even know this was a field. It included some of the doctors who are testifying here today. There were six doctors, they have seven opinions and they ranged from throw it in the washing machine to get out of town and don't look back.

So the question for us is, what's in the stuff? Every day, the air smelled different and the winds blew a different course. We made our own rules divined from press reports, from high school science as we remembered it, from the advice of friends of neighbors. One scientist friend who lives two blocks from Ground Zero measured the asbestos and lead levels in his apartment and declared it safe for his family. They went back after 3 weeks. The managing agent of his building, however, reported high levels of those substances in the building's public areas. So the question is, how to interpret the facts.

In the end, 248 stuffed animals, 8 handmade baby quilts, 5 mattresses, a trousseau's worth of sheets and towels, all the food in my kitchen and 13 leaf and lawn bags of toys went into our trash. We didn't throw away our books, our drapes, our upholstered furniture or our clothes, although it did cost $16,000 to dry clean them. We washed the walls, but we didn't repaint them. Some people we know repainted, but they kept their mattresses. Some people kept their stuffed animals, but they threw away their furniture. Some people kept what they just couldn't bear to lose and got rid of everything else.

Now, we haven't decided what to do about our floors. We can't decide, if we strip, sand and reseal them, will the asbestos, fiberglass, concrete, human remains, because we know there are body parts pulverized throughout our apartment, heavy metals, and these vague particulates, will they be contained or will they just be released into the indoor air? I should say, I'm going to submit for the record a January 11th memo I've just received from Cate Jenkins of the EPA. When you read this, I want to go home and I want to take all my furniture and just

put it out on the street. So I'll let you decide.

Senator Lieberman. We'll include it in the record.

Without objection, so ordered.

Ms. Berger. Thank you, Senator.

Indoor air is a tough issue. In our building, we have a very primitive central air system. It circulates the air from apartment to apartment. Some people hired professional cleaners. Others did it themselves, and a few locked the door and just didn't come back. So after the guys in suits left our apartment, we sealed our windows, we filtered our vents, we bought six triple-HEPA filtered air purifiers, which we run 24 hours a day. My extremely clean air is working its way through the building, as is the air of my neighbors who didn't do that. Now, this is also true for outdoor air.

Our building, all the systems in public spaces have been professionally cleaned following the city DEP guidelines. We are surrounded by buildings that have either not been cleaned or have been cleaned very summarily. Now, we live on the 11th floor. So we see the poor porters in the commercial buildings around us sent up on the roof by management with push brooms. I'm going to show you what it looks like. These pictures were taken from my neighbor's window last week. That's not snow. That's stuff. That's coming through our windows. I will submit these to you as well.

Senator Lieberman. Without objection, so ordered.

Ms. Berger. Now, in our case, much of this debate has been academic. We decided that with two young children, it would be very foolish to return to our homes until the fire went out. Now, we were urged to return to normal. Every time that we thought we were being a little crazy and should go back, there would be a new report of asbestos, of heavy metal and other readings in the warm zone. We were told, well, you live in the financial zone. Except our building's front door is 16 feet from the fence of the warm zone.

Now, that was not easy. We've been home for 3 weeks. We're all happier, but we don't know if we are safe. Now, this is what my 5-year-old asked me to tell you. She said, tell them please that we lived in three places in 4 months and that it was very, very hard. So we're back home. We've opened our windows, but we're not going to the park. Some of our neighbors have HEPA window screens, some have their windows duct taped, others have put their apartments on the market. We don't know what the right thing to do is. Ours is a culture that's based on authority, but there has been none.

We would do whatever we needed to do if only we knew what that was. I have to say in this regard, the failure of the Federal regulators to recognize that this is a residential community and to think that OSHA standards apply is just an outrage. I mean, we could smell it, computers, fluorescent bulbs, copiers, electrolytic fluids, bodies. Let me tell you, everyone downtown knows that we are the baseline of the 30-year study on what happens when worlds collide. As a parent, that is the most frightening experience and responsibility I have ever faced.

What I find ironic in all this is that the only authority I have found with respect to cleaning up the mess is William James, who was the father of pragmatism. Pragmatism is arguably

the only American contribution to world philosophy, so I guess it makes sense that when we're feeling very American, we're turning to him. Now, as you know, Senator Lieberman, he was a Harvard man, so I'm sorry to quote him. But as he said in a lecture he gave right here in New York City in 1907, ``We have to live today by what truth we can get today, and be ready tomorrow to call it falsehood.'' I first read that when I was 19 years old in college, and I thought it was pretty cynical. But now, as a 41-year-old mother of two, while I'm horrified by the implications for my children's future, I know it is the only way we can live.

James also said, ``Truth is an affair of leading.'' Now, this is your charge. On behalf of the almost 30,000 people who live here, I commend you for following it and I urge you not to let go.

Senator Lieberman. Thanks very much for a very important and eloquent statement. Thanks very much, and I think I can speak for Senator Clinton when I say we accept the charge. That was a very important and poignant statement.

Dr. Kelly, welcome and thanks for your testimony.

STATEMENT OF KERRY J. KELLY, M.D., CHIEF MEDICAL OFFICER, NEW YORK CITY FIRE DEPARTMENT

Dr. Kelly. Good morning, and thank you for inviting me to appear before the subcommittee.

I am the chief medical officer of the New York City Fire Department. I responded to the World Trade Center on September 11th and participated in the rescue and recovery efforts that thousands of our members undertook on that day and on the days to come. The recovery effort still continues now, engaging our members in recovery of both civilians and uniformed members, 7 days a week, 24 hours a day.

The FDNY response to the World Trade Center event placed our members in the epicenter within moments of the first plane hitting the north tower. Members from emergency squads, rescue companies, engines, ladders and medical teams from across the city responded to the call. Firefighters about to end their daily tour of duty stayed on. Off duty firefighters commandeered vehicles. Retirees and members on sick leave found their way to the scene.

Within a matter of moments, these rescuers became victims, soldiers in the worst terrorist attack on our Nation's soil. Three hundred forty-three members lost their lives that day. Over 200 members were seen in emergency rooms for physical trauma. Many members required hospitalization and surgical intervention for significant orthopedic injuries. The rescue and recovery effort involved thousands of members following a job-wide recall during the first few days of operation.

In the initial moments and hours after the collapses, firefighters and emergency workers continued to work without pause in the desperate search for survivors. The air was full of thick debris and dense dust clouds, with visibility so bad that one could not see people more than 3 feet ahead. With the collapse of the towers, and avalanche of acrid debris, metallic meteors and a shower of gray dust descended on the survivors, blanketing the new wave of rescuers as they rushed in to

assist. It seemed as though day had turned into night, but still our members continued searching for survivors in the surreal, black blizzard of debris. Fine dust coated every crevice, making features indiscernible.

Dust, debris and particulate matter choked breath and irritated the eyes. Due to the vast numbers of FDNY personnel at the scene, respirators were not available for all members working at the site. Many also found it more difficult to operate while wearing respirators, and many chose to carry on their search for survivors unprotected. Members ignored or fought against symptoms. Many did not sleep for days, pushing themselves to continue the search for survivors.

In the immediate aftermath of the collapse, as the rescue work continued, many members complained of eye irrigation, as well as, cough and congestion. As the air quality improved, eye irritation symptoms improved. Cough complaints continued. Pulmicort inhalers and inhaled steroid was offered to offset the allergic cough symptoms.

Concerns for the physical and mental health of members were raised by FDNY medical staff in those first few hours and days. Due to the cough symptoms that members exhibited, questions were also raised about exposure levels that were present at the scene. It was, and is still unclear what exposures members might have been experiencing following the fall of two 110-story towers combined with the combustion of two planes and jet fuel.

Within a week of the tragedy, the Fire Department's Bureau of Health Services began preparing for an unparalleled medical monitoring procedure for all members exposed at the site. BHS partnered with National Institute for Occupational Safety and Health and the U.S. Centers for Disease Control and Prevention on this project. We are very grateful for the funding we received from the CDC to conduct this initial analysis of our members. From October 6 through 12, an initial sampling of 400 exposed members were given comprehensive medical evaluations.

BHS, NIOSH and CDC were satisfied with the logistics and implementation of the medical evaluation, and BHS immediately began the vast project of testing the remaining members. We worked 7 days a week, with three shifts a day, and were able to see approximately 180 members per day. From October 31 until January 31, the medical monitoring of all personnel who responded to the World Trade Center was undertaken. Almost 10,000 firefighters and 800 EMS personnel have now been evaluated. I am proud to say that our initial medical evaluation of all the members who responded to the World Trade Center is now complete.

Medical monitoring consisted of ECGs, pulmonary function tests, chest x-rays, hearing evaluations, and blood testing consisting of CBCs, chemistries, liver functions, lipid profiles, lead, beryllium, PCBs and urine mercury and urinalysis testing. In addition, testing of dioxins and hydrocarbons was done at the CDC lab on the initial group of 400. Blood from all remaining members was banked, to be tested at a later time if the need arose. Although some of these tests are part of a routine medical exam, other more specialized tests were conducted due to environmental concerns.

At the time of the medical monitoring, members also

completed a computerized survey regarding their physical complaints to assist the Department in tracking the symptoms that members are experiencing. BHS has compiled a very complete record of each of our members from prior annual exams to use as a baseline for comparison.

Since the testing was completed less than 2 weeks ago, the complete results from this computer survey are still being tallied. Preliminary blood tests have not indicated any significantly elevated levels of toxic metals or abnormal chemistries or blood counts. At the time of completing the computer survey, 25 percent of our members reported cough and shortness of breath on exertion. The pulmonary function tests taken during the medical evaluation have shown a decline that matches this complaint. In most cases, this change has not affected overall functional capacity. Some members remain ``off the line'' with active symptoms, while others have returned to work.

Our current medical leave rate is a reflection of both the rise in respiratory symptoms and post-traumatic stress. There has been a twofold increase in both respiratory problems and stress-related problems in the last 5 months. It remains to be seen how members will recover from this event.

However, in order to measure recovery, we must continue to monitor all of the members who responded to the World Trade Center event. We are grateful to have received funding from CDC for one additional medical examination per member in the future. We remain concerned about the potential health problems in our members. We are also concerned about longitudinal followup with our members. Those who become ill, or experience a trauma of this level in their working life, may choose to retire from this job when they can no longer withstand the rigors of this work. We want to ensure that our members continue to receive monitoring in the future, whether or not they retire from the Department.

For this reason, the Fire Department's Bureau of Health Services is now actively seeking funding for this project. We must affirm our commitment to the members of our Department who gave so much to this city and to this country, and who have inspired people around the world with their courage and determination. We owe it to them continue to monitor the effects that their exposure on September 11th may have on their future.

Bureau of Health Services has the pre- and post-World Trade Center records, the expertise and the logistical set-up to conduct an unprecedented and thorough investigation of the effects of the exposure our members experienced on that terrible day. Let us not forget that more of our members experienced a far greater level of exposure than any other group in this city. As far as I know, there are no hard and fast answers to the potential effects of exposures. Many unknowns remain. That is why it is critical that we continue our monitoring.

The events of September 11th were catastrophic. In a matter of moments, our members became participants in a battlefield. The FDNY response was outstanding when we review the numbers of civilians saved and we measure the heroic efforts of so many individuals. Our losses are deeply felt with the deaths of

members from every rank and every branch of our service. Our memories are filled with the experiences of that day and the many days that followed. Both physically and emotionally, we have been challenged by this event.

As we rebuild our Department, we must also restate our commitment to our members who worked so hard to save others. I am sure we can all agree it is no less than they deserve.

Thank you for your time.

Senator Lieberman. Thanks, Dr. Kelly. Thanks for those very important results, and also for your eloquence.

Dr. Thurston.

STATEMENT OF GEORGE D. THURSTON, ScD., ASSOCIATE PROFESSOR OF ENVIRONMENTAL MEDICINE, NEW YORK UNIVERSITY MEDICAL SCHOOL, NELSON INSTITUTE OF ENVIRONMENTAL MEDICINE

Dr. Thurston. Good morning. Thank you for this opportunity to share our scientific results in your process of investigating the World Trade Center disaster.

On September 12, my research center at the NYU School of Medicine received an urgent request from the Office of the Director of the NIEHS, the National Institutes of Health Sciences, one of the National Institutes of Health, to respond to the environmental impacts of the attack of September 11th by doing whatever we could to monitor the air pollution that was resulting from the disaster's dust and fires. That evening, we sent a research team into the World Trade Center disaster zone to collect numerous samples of the dust from locations surrounding Ground Zero. The red dots on this figure display the points at which they were able to gather samples of the World Trade Center dust for us to analyze.

Our NYU Medical School research team also set up an ambient outdoor air monitoring station at the NYU Downtown Hospital at Beekman Street, just five blocks to the east-northeast of Ground Zero. It's also noted on the figure. We sampled for various types of particle air pollution from Friday, September 14th until the end of 2001. Although our work is far from complete, we have weighed these samples to determine the outdoor particulate mass concentrations, as well as analyzed the ambient air pollution samples and the World Trade Center dust for their constituents.

Therefore, our sampling data, and my testimony today, applies to the general public living and working in the vicinity of the disaster, rather than to the rescue workers exposed at Ground Zero.

As shown in the next figure, our analyses of the World Trade Center dust samples revealed that some 99 percent of the dust was as particles too large to be penetrate deeply into the lung, being largely caught in the nose, mouth and throat when inhaled. This large dust, however, contained approximately one-third fiberglass, with much of the remainder as alkaline cement dust. This large dust therefore was quite caustic and had the high pH that Congressman Nadler was discussing. Therefore, it's caustic and irritating to the eyes, nose and throat, consistent with the now infamous ``World Trade Center cough'' that nearby residents reported.

Only trace amounts of asbestos were found in our samples.

The less than 1 percent that was as PM2.5, or the particles that would reach deepest in the lung, was found to have a neutral pH, with no detectable asbestos or fiberglass. I think that's an important distinction from the results that were, I gather, discussed. I didn't read the article. If you just looked at these dust particles as an aggregate, it's dominated by the large particles, and those are very caustic.

What we did was, we re-aerosolized the dust and we analyzed it by size fraction, which is a very important distinction. Because it's the fine particles that would get deep in your lung. Those were not caustic, those were not alkaline like the large dust that would be in your eyes, your nose, your throat, and therefore would give you symptoms but not get deeply into your lungs, which is a relief.

Thus, while our analyses are consistent with the Government's conclusion that the World Trade Center dust is not likely to have short- or long-term serious health impacts from the fine particles on otherwise healthy local residents, we found that it is very irritating and capable of causing the symptoms reported by many residents. I would also note that we also sampled in November one indoor residence near the World Trade Center. We found very similar results of those particles inside the home as what we found outside, where the majority of the particles were in these very large size fraction that would be caught in the eyes, nose and throat.

Our sampling of the outdoor air pollution at NYU Downtown Hospital, and let me go to the next figure there, showed that air pollution levels were very high in the first weeks following the attack, especially at night, but then diminished as the fires were brought under control. By October, soot levels in the downtown area were generally similar to those that we measured at the NYU Medical School in midtown, First Avenue and 26th Street. We were also monitoring at another location up toward midtown. Although levels occasionally climbed in downtown on clear, calm nights throughout the fall. This is pointed out in this figure, you can see that the black line is the 24-hour average that the EPA might report and measure. Then we had day time and night time samples. Each evening, the levels are higher and lower in the day time. So when the winds diminished at night, the pollution levels would buildup.

Overall, our independent air pollution sampling results were largely consistent with the data reported by the EPA. In particular, although short-term peaks in PM2.5 particulate matter air pollution for a few hours did occur at night, the 24-hour averages were of PM2.5 were within the legal standards set by the U.S. air quality laws.

Despite the fact that individual pollutants in the community were apparently at safe levels for otherwise healthy persons in the general population, it is impossible to know what potential interactive effects might have occurred among the various pollutants, even at these low levels. Ultimately, only epidemiological followup studies of possible effects among especially susceptible individuals will provide a fuller determination of the issue of possible health effects from the various pollutants in the World Trade Center plume.

Finally, I feel strongly that we must make sure to learn

all the lessons that we can from this horrible catastrophe regarding the communication of risk to the public in such emergency situations. Something like what happened to New York City on September 11th could, unfortunately happen again, and we must be prepared. It is an understatement to say that the public is skeptical of Government pronouncements of safety in such situations.

In this case, I feel that the EPA was too quick to declare the air ``safe'' and did not well enough define what was meant by that term. Although the fine particle pollution was not of a level that would make otherwise healthy people very sick, the dust was caustic and irritating, causing many to have severe and upsetting symptoms, including eye, nose, and throat irritation. This caused people to further doubt governmental pronouncements of safety, even after more complete data were available confirming the EPA position.

As a result, the press turned to the academic research community of New York City to fill the void. It has been my duty and honor to play a role in the academic effort to answer the environmental questions that New Yorkers had, and still have. But we must improve the current situation. While we cannot create governmental trust where there is none, I believe that we should draw upon what happened in New York City to help the Nation better cope with such situations in the future.

The Government should designate a suite of environmental parameters to be measured in such situations, and designate the appropriate health standards for best comparisons in such short-term exposure situations. There was a lot of confusion, especially in the press, citing which standards to compare. They would get hold of data, and they would compare it to a standard, and it would be an inappropriate standard, then it would lead to false or, inaccurate, let's say, conclusions from the data. So you really have to know what you're comparing things to. I think there was a lot of misunderstanding about how to interpret the data that was collected and reported in the press.

Moreover, I recommend that we create a mechanism by which blue ribbon panels of the leading independent experts in the United States are formed in advance, perhaps by the National Academy of Sciences, to be on standby in case, God forbid, such an emergency happens again. If this is done, there would then be an independent expert panel ready to be assembled, briefed, and to then give their quick-turnaround assessment of the public's environmental risks, and of the appropriate actions that are needed to protect public health. Without such new mechanisms, I fear that any future such disasters may be accompanied by the same unfortunate confusion, doubts, and distrust. Let us act now to help preclude this risk communication problem from happening in the future.

Thank you for the opportunity to testify on this important issue.

Senator Lieberman. Thank you, Dr. Thurston, for some very constructive recommendations. It kind of reminds me what we went through in the Capitol when the anthrax was discovered in Senator Daschle's office. There were some very quick reassurances which turned out not as time went on to be justified. It's a lesson for all of us which is, sometimes when

you're not certain, the best thing to say is nothing. Then when you have some more information, to say what the information leads you to say.

So I look forward to coming back in the question and answer and asking you more about that.

Our final witness on this panel is Eric Goldstein of the National Resources Defense Council. Thanks for being here.

STATEMENT OF ERIC A. GOLDSTEIN, NEW YORK URBAN PROGRAM DIRECTOR, NATURAL RESOURCES DEFENSE COUNCIL

Mr. Goldstein. Thank you, Chairman Lieberman, Senator Clinton. It's an honor to appear before both of you, and we appreciate your holding these hearings and all your good work on the environment and for New York in general.

My name is Eric Goldstein and I am the New York program director at the Natural Resources Defense Council. First, let me express the condolences of NRDC on behalf of all of my colleagues to all of those who lost loved ones in all of the terrorist attacks on September 11th.

In the aftermath of the September 11th tragedy, my colleagues Megan Nordgren, Mark Izeman and I began pulling together a 1-year report and analysis of the environmental impacts of the World Trade Center disaster and the Government response to those events. We are releasing a preliminary version of that report on Wednesday, and hope that you will be able to incorporate the entire document into the record of this hearing. I'll try to quickly make three points and several recommendations.

First, the September 11th attacks, in addition to the horrific loss of human lives and the huge economic dislocations, constituted an unprecedented assault, as we all know, on Lower Manhattan's environment. The collapse of the 110-story towers, two of them, the conflagration of vast amounts of toxic materials, the forced distribution of debris and dust throughout portions of Lower Manhattan, the long-burning fires at Ground Zero all combined to create unquestionably the single largest air pollution episode in the history of New York City and probably urban America.

NRDC's report estimates that at least 10,000 New Yorkers suffered short-term respiratory or other pollution-related impacts from the Trade Center's collapse and subsequent fires. Thousands of apartments and offices in the immediate vicinity of Ground Zero received significant loadings of polluted dust. As Congressman Nadler forcefully noted, there is of course much that we still do not know about the air quality impacts of the September 11th attacks. That's why the health studies that are now being undertaken by Dr. Landrigan at Mount Sinai, Dr. Carerra at Columbia, Dr. Thurston at NYU, Dr. Kelly at the Fire Department and others are so important. That's why continuing monitoring and assessment is so urgent.

Based upon the incomplete data that is now available, here's what we can say. In general, outdoor air quality in Lower Manhattan today is approaching or similar to levels in the area prior to September 11th, with some exceptions. Some portions of the Ground Zero work pile, of course, and localized hot spots, such as areas with heavy concentrations of diesel

buses and diesel equipment, and at times, areas where Trade Center debris is being removed or transferred to barges.

The most worrisome air pollution problem facing Lower Manhattan today, in addition, of course, to the worker safety concerns, now involves indoor pollution threats in some residences and offices that were engulfed with thick layers of contaminated dust and whose buildings were not properly cleaned. These are pollution challenges that remain. They are pollution challenges, including getting the best available filtration devices for Stuyvesant and some of the schools there that are manageable and solvable. But they exist, and they shouldn't be swept under the rug.

In many ways, the response of Government agencies and their employees to the Trade Center attacks was heroic and a testament to the merits of public service, which is too often undervalued. We recognize the environmental and health agency staff who performed many tasks with distinction. EPA personnel, for example, undertook numerous assignments including the removal of hazardous waste from the Ground Zero site, the deployment of HEPA vacuuming trucks and the establishment of sophisticated air quality monitoring and testing facilities. But there were some Olympic-sized problems as well, and I want to briefly highlight them.

No. 1, overlapping jurisdiction among at least nine city, State, and Federal agencies. This was a problem. This meant no single agency was in overall charge of the environmental response to the September 11th attacks. It meant that no agency took the lead in ensuring environmental safety for those working at Ground Zero. It meant that no agency took affirmative charge of the environmental cleanup and inspection of environmental conditions prior to re-occupancy of residences and offices in the vicinity of Ground Zero. Many of these problems, NRDC believes, resulted from shortcomings of the Giuliani administration, which handled so many other aspects of the September 11th response magnificently and which was in tight, overall command of the entire rescue, recovery and cleanup effort. The low profile of the city's Department of Environmental Protection, which has 6,000 employees and wide-ranging authority under the New York City charter to respond to environmental emergencies, lends support to the growing belief the department does not rise to the challenges posed by the September 11th attacks.

No. 2, a major problem involved communicating environmental health data to the public. As Ms. Berger has stated so compellingly, there appeared to be no coordinated strategy for conveying such information to concerned citizens. There were no regular briefings of Government leaders of environmental or health agencies. There was no one place for citizens to turn to get environmental guidance and advice. Test data was not often promptly released.

Government statements on air quality, at least as the public understood them, stressed the good news and de-emphasized issues that might raise further concerns. By focusing almost exclusively on long-term risks in their public statements, Government officials omitted warnings regarding short-term health effects, particularly to Ground Zero workers and other sensitive sub-groups. For at least a small portion of

those who suffered from short-term impacts, there could well be long-term consequences.

Admittedly, the Government agencies had a very difficult assignment here, and were responding not to an industrial accident but an act of war. Nevertheless, as a result of shortcomings on the communications front, a troubling credibility gap on environmental health issues emerged.

No. 3, difficulty has been environmental safety shortcomings at the Ground Zero site itself. While rescue, recovery and site cleanup operations have made remarkable progress with some heroic actions, the environmental health issues that were handled at Ground Zero represent a glaring exception to that overall record of accomplishment. A prime example has been the failure to require Ground Zero workers to wear appropriate respirators. The OSHA representatives who seemed to argue that they were only at Ground Zero in an advisory capacity, and did not or could not insist upon the wearing of respirators certainly have some explaining to do.

Among other onsite safety problems of significance were undue delays in establishing worker safety training procedures. It's one thing in the first day or couple of days after, but it's another thing when those procedures haven't gotten underway weeks and months after the tragic events of September 11th.

A final shortcoming in the Government's environmental response involves problems assisting Lower Manhattan residents in environmental safety and cleanup issues. As previously stated, in addition to the communications gaps, agencies failed to prepare and provide complete and proper cleanup protocols for many Manhattan residents, they failed to inspect even the most heavily contaminated buildings for environmental safety, prior to reentry. No agency took overall responsibility for supervising the environmental cleanup and safe re-occupancy of these apartments. It was left, for the most part, to residents and building managers to sort these complex challenges out for themselves.

No. 4, as to recommendations. We support Senator Clinton's five-point program, of course, including S. 1621, and the Health Registry funding. We urge that you encourage EPA and the New York City Department of Environmental Protection and whatever other agencies they together feel are appropriate to create an Air Pollution Assistance Center located in the Ground Zero vicinity, fully staffed to answer and respond to residents' questions and provide one-stop shopping to address the air quality and health aspects of this tragedy. Also, those two agencies, U.S. EPA and the New York City Department of Environmental Protection and others create a joint task force that will promptly begin door-to-door visits and inspections of individual buildings, to verify environmental conditions, at least in the immediate ring of buildings within a 10-block radius of Ground Zero.

Second, we urge that you prod the Occupational Safety and Health Administration and relevant New York city officials to commence without further delay enforcement of environmental safety rules at the Ground Zero work site. Third, as we mentioned and you mentioned before, we urge you to assist medical institutions, such as those mentioned before, in

securing the funds they need for these critical public health studies, and to help obtain funds for a full health registry of all Lower Manhattan residents and workers.

Finally, we urge you to convene a second hearing and otherwise find ways of address the question of whether the Federal Clean Air Act pollution standards and pollution monitoring requirements need revision in the wake of the lessons that we've learned from the September 11th tragedy. Ultimately, if there were no violations of Federal air quality standards from this event, the Federal and State air quality standards certainly need to be re-examined.

Thank you very much for inviting us to testify, and we definitely appreciate your interest in this issue.

Senator Lieberman. Thanks, Mr. Goldstein. We have become accustomed, obviously, to saying what happened on September 11th was unprecedented in our history, that we never have been attacked that way. You said something in your testimony that may surprise some people, but it's important to the specific focus of this committee, that what resulted, and I quote you, was unquestionably the single largest air pollution episode in the history of New York City. That cries out for our attention at all levels of Government now.

Let me begin with a few questions and then I'll yield to Senator Clinton.

Dr. Thurston, you stated that only followup epidemiological studies will truly reveal the cumulative effects any of the pollutants had or will have had on people in the area who are exposed, particularly sensitive sub-populations, such as children. That struck me as remarkably consistent with what Ms. Berger said when she said that she knows that she's now part of a 30-year baseline study by the fact that she lives in this area.

I wanted to ask you how you would advise residents to evaluate the risks from the pollutants, given the uncertainty. In some sense your testimony has been reassuring, based on your studies. In other senses, it obviously, I would guess, and I'll give her a chance to say, leaves Ms. Berger and other residents with questions about the future.

Mr. Thurston. Right. Well, first let me say that I think there's only so far we can go by looking at the pollution levels and trying to interpret them. I think that's the first cut that we've done. We've looked at it, and we're not through with it yet, but looking at the pollution levels, the various pollutants, analyzing them, and trying to figure out what the potential for health effects are.

But the serious complications of this of course is that we've got a mixture of pollutants that are different from what we normally experience. We do normally experience quite a bit of pollution in big cities like New York, Los Angeles and London, so that the epidemiologic studies I think are necessary if we're going to get to the ultimate bottom line, is did it affect people's health. I think initially as you look across the pollutants, and we're not done yet, but it does appear that looking at them individually, that in the general public that the health risk is not significantly high.

Now, of course, the Ground Zero workers, rescue workers and people like that, there's a different exposure and evaluation

that has to go on. But then when you start considering the fact that there was this mixture that's not like other pollutants, we really can't go back to previous studies to evaluate what the health impacts are. We were saying that the air quality standards aren't adequate for assessing these. Well, the way that air quality standards work is, you look at past history and you have to use studies that are published, and then you say, well, OK, in those situations we saw effects, so we'll set the standard.

We have nothing to look back to try and set those limits. So I think that's going to make it much more challenging.

Now, in terms of advice to people, I think that it really is going to be on an individual level. In other words, otherwise healthy people are probably going to have very little concern. But then if you have a pre-existing condition, a pre-existing disease, young children, for example, spend a lot more time crawling around on the floor, such that if an apartment wasn't fully cleaned and there's still lead, there are elevated levels of lead in the dust. Although levels we've found would be acceptable to be in a playground under EPA limits, but not acceptable to being on the floor in a home. There's a higher level, because children are crawling, you have very young infants that are crawling around and then they'll put their fingers in their mouth and they'll get a higher exposure.

So it's very difficult, of course, you can't give across the board advice here. I think that it's going to be very individual and it's going to depend on what the pre-condition is of the person and whether it's a pregnant woman or not. That makes a big difference.

So those are the kinds of things that have to be considered in deciding what action to take. So it's going to be pretty individual, there's no broad, across the board advice, I think, that's going to serve everyone.

Senator Lieberman. So what do you say to Ms. Berger? Should she be, for instance, taking her children regularly to a doctor to examine them for possible effects from air quality?

Mr. Thurston. Well, I don't know the situation of the exposures and things, so it's very difficult to evaluate that. I know that when I came down in November to speak to the parents at Stuyvesant High School, at that point I told them that I would be more than glad to have my daughter go to that school because of the excellent education she would get. I felt comfortable that the pollution levels for a healthy child like mine would be appropriate, it would be fine, she wouldn't have a problem.

Now, if she had severe asthma, then maybe I would have had a somewhat different decision. So it's very difficult for me to give advice without knowing the situation.

Senator Lieberman. Let me ask Ms. Berger whether you are at all reassured by what Dr. Thurston or Mr. Goldstein has said this morning.

Ms. Berger. I'm not particularly reassured by what Dr. Thurston says. I mean, I read before some of his findings.

I don't think the issue is a global one. I don't think anybody believes there can be a certain answer. I think that's actually the history of asbestos, that this long-term exposure and it's after the fact, as he said, looking at the studies.

But what we don't know is how to clean appropriately. You've just said, if you clean appropriately, you should be fine. Well, I've done almost everything that's been suggested. Every time I turn around, there's something else, there's something that I've not done. That's really the issue. I mean, the basis of the Kay Jenkins report is that in certain homes they tested in Tribeca, the asbestos levels are 22 times what they are in Libby, MT, which is a Superfund cleanup site.

Now, you're right, I have no idea how to evaluate that. But I'm not a scientist. So what does that mean for me? She says that the reason why the numbers are so off is that the testing procedures are incorrect. There's a huge debate, again, I'm sure you know it, about the size particle.

So I guess what I found so wonderful about your five point plan and the way I would expand upon it is what are the testing procedures, why aren't the Federal regulators coming in, setting the standards, why aren't they doing the testing. Then, of course, there are the financial issues, which is, what's the cost of abatement on an individual level and who bears it.

Senator Lieberman. Very strong points. Dr. Kelly, let me ask you a few questions. I gather from your testimony that in the studies you've done and the work you've done with the firefighters involved here that there's no evidence of increased metallic or other toxins in their blood, but that there is, basically 25 percent, or a quarter of those firefighters surveyed not only have respiratory concerns but in fact your studies and tests of them show that they have respiratory problems. Have I heard that correctly?

Dr. Kelly. Yes, that's true. Our computer survey with the symptoms, the results from the initial 400. We are still tallying the computer survey for the remaining 10,000. But that's approximately 25 percent.

We've certainly seen a number of people who have been ill, unable to work due to respiratory symptoms. With treatment, some have been able to go back. Others have not. I know you mentioned that some of the people who are most at risk are people who have underlying respiratory problems. But in the case of our firefighters, these are people who are in good health. These are people who have excellent pulmonary function tests. We have baseline studies to show that.

This group is even more disheartened, because this is a group that is normally very athletic, physically active. To suddenly not be able to breathe or have symptoms and perhaps face the loss of a career that they've loved is very upsetting to them.

Senator Lieberman. Is there any indication in your studies about unique characteristics to the 25 percent who are showing respiratory problems? In other words, did it have anything to do with where they were on the site or what they were doing or when they were on it?

Dr. Kelly. We're still analyzing that as part of our survey. We are asking what days they were working, what kinds of activity they were engaged in. That will take continuing studies. That's what we plan on doing over the next month or several months.

Senator Lieberman. I was pleased, incidentally, that CDC, which is obviously a Federal Agency, is supporting some of the

work you're doing. I hope they or some other Federal agencies will continue to support it. Because this is very important work to be done.

Do you know if there are any studies going on of the health of firefighters or other emergency workers who came in from outside of New York?

Dr. Kelly. I don't know the answer to that.

Senator Lieberman. A final question. Your testimony and other material that I've read indicates that not only were there not enough respirators available at the site, but also that the equipment the fire department had was too bulky and that firefighters couldn't use it for extended periods of time. Am I correct in that understanding, and if so, is the fire department looking for lighter weight breathing equipment for the firefighters now?

Dr. Kelly. They will be continuing efforts to see what equipment we can adapt or use for these situations. The P100 mask or respirator is excellent for both vapor and for particulate matter. That was not as widely available at the scene, though, in the initial few days. Again, this was a war zone. The initial several days, the control of that site and that environment was not easily done. The overall response of our members was phenomenal, and people responded without really any equipment just to be there and see what they could do to help. Their efforts were really looking for people, finding people, not even thinking of protecting themselves.

Senator Lieberman. So some, I presume, just didn't put the respirators on because they were so focused on exactly what you said, the search for survivors?

Dr. Kelly. The availability of those respirators was not there, at least certainly the first few days.

Senator Lieberman. Is that because they were not available in the department generally, or there were too few, or just that they didn't get to the site on time?

Dr. Kelly. Again, we lost, had crushed over 70 some rigs. Those are the rigs that normally would hold the backup equipment. The mass service units, which are the units that come to bring additional equipment, were lost. We had tremendous losses of equipment and manpower that day.

Senator Lieberman. Thanks. Senator Clinton.

Senator Clinton. Thank you, and I want to thank the panel. I particularly appreciate all of the recommendations that you've given us for future actions. I just want to ask a brief question of each of you.

Liz, you just made a point about the cost of abatement. You have done everything you know to do, and you've done it to the highest possible level, trying to make your living situation as safe as you can. Did insurance cover any of that for you?

Ms. Berger. I have to say, the insurance companies, in my experience and the experience of my neighbors in general, have been pretty good. The problem is that most people are under-insured, myself included. Most of what we're talking about comes under personal property damage. There was not a lot of structural damage.

We're maxed out. The Federal agencies have been useless. I went through the FEMA process, I went through the SBA process. I kind of enjoyed being told by the SBA that I couldn't have a

loan because I didn't have enough debt. Well, maybe now I will.

Senator Lieberman. Yes, your Federal Government qualifies for a loan on that basis.

[Laughter.]

Ms. Berger. It was just unbelievable. So in this case, I mean, I can say for me it's not a question of money. I will do whatever I need to do. For many people, it is, though. A lot of people who didn't have renter's insurance, there were people whose windows were open and so who had even greater property damage. But to look at some of the reports that essentially say, anything porous goes out the door, it's tough.

Senator Clinton. Well, I am concerned because right now we are facing decreasing insurance available for any purpose with respect to terrorist attacks, and in particular here in New York. So what was available on September 10th may no longer be available. That's a double whammy.

The other thing I just don't understand is, I've been talking to the agencies and being quite agitated about this for months, is that with all the money that came in, why helping owners and renters clean up their living space was not on the list, is something I don't understand. If the law needs to be changed, if SBA or FEMA or any other agency needs to be empowered to try to help, I think we have to look at that as well. Because it's just not been appropriate the way that there's been no help on these issues.

Ms. Berger. Senator, if I could just add one more thing. We've now increased our personal property insurance but our building, which is a co-op, has the misfortune of having its insurance come due in the first few months after this. We had a very difficult time finding a carrier that would write the policy. That is really the issue, co-ops are kind of a unique form of ownership here in New York. But to have a building without insurance, it's pretty difficult.

Senator Clinton. Well, I appreciate that very much.

Now, Dr. Kelly, I thank you again for being willing to come and testify and I want to thank Dr. Prezant, who's with you, who I know has been your partner in doing this work. I'm pleased that I was able to get some CDC money, Senator Lieberman, about $12 million, for these followup studies. But that is woefully inadequate for what needs to be done. If we're looking at longitudinal studies for 20 to 30 years, taking into account not only the firefighters and the first responders and the construction workers who I feel strongly have to be involved in the followup, but also residents and workers in the area generally.

I'm hoping that the methods that you've used, which I am very pleased you had a chance to describe today, will be looked at as a real model.

If you, though, were to have the funding for the broader, longer longitudinal study that you have referred to, could you use the existing protocols and methods that you've already used for the shorter term October to January study, or would you need some additional assistance to design and implement such a study?

Dr. Kelly. We certainly have the infrastructure in place. Our concern is again, the longitudinal followup. We don't know all the substances that people have been exposed to. One reason

we've banked blood is so that if substances become apparent that we are unaware of, we will at least have the opportunity to go back and check that blood. We're also concerned that currently, once members retire, we no longer follow them, and therefore it becomes difficult for good followup over the years to see how people are doing.

So that's an area that we have a level of concern and we would want to continue that information gathering. Because again, this is the most affected group. If we look ahead to say how are people going to do, we need to have an ability to follow these people as time goes on.

Senator Clinton. Well, I agree 100 percent. I also believe that we haven't up until now done a very good job in our country following chronic diseases and conditions in any event. It takes a disaster like this to point out the fact that we have a system to track infectious disease, but we don't have a system to track chronic disease. Maybe this will be the wakeup call we need to put such a system in effect, and then to correlate that with environmental information. Because the interactions which Dr. Thurston referred to is something that we just don't know the meaning of yet.

So I hope that as Senator Lieberman and I go forward with additional legislation and hearings on this that we will look to the fire department as a real example of what can be done.

Dr. Thurston, you have mentioned that we do have fiberglass found traces of in some of the materials that have been tested. As you know, the city announced on Friday the continuing presence of fiberglass in indoor dust samples. When somebody hears fiberglass, when I hear fiberglass, I find that disturbing. In your testimony, you were critical of EPA's use of the term safe.

How, though, can we communicate more effectively? Both you and Mr. Goldstein made the point that we didn't communicate information effectively. When we hear in the public that there's fiberglass, then we hear an agency say that it's safe, how do we sort that out? Do you have any guidance on that?

Mr. Thurston. The issue of fiberglass, there is actually more than just a trace of fiberglass in the large particles. But fortunately, those are very efficiently caught in the upper airways, the nose, throat, the mouth, thankfully they don't get deeper in the lungs. Also, fiberglass is very irritating as was mentioned. It's also more readily cleared than asbestos from the lung, so that it doesn't insinuate itself into the linings of the lungs as readily, so that it's not as long a term risk, not thought to be as long a term risk as say, asbestos. So it's a short-term irritating kind of effect.

Now, in terms of having something to compare it to, that's what I mentioned, we need to look at the standards we have. Something like fiberglass, something like asbestos are based on a 20-, 30-year exposure to it in an occupational setting. We just don't have that here, thankfully. But it's difficult to then take that and ramp it back to let's say a 1-year exposure and figure out what that means. Because the mechanisms are different in acute versus chronic exposure effects.

So it's a challenging thing. I think it will require, again, perhaps a National Academy of Sciences panel or EPA to go back and look at their standards and say, how can we set

these, so that we can set up some criteria by which to compare. I think mentioned a few moments ago was the asbestos counts and very high counts, when you use techniques that look at the very finest asbestos. I think it's a good example of comparing apples and oranges. It's led to a lot of confusion and scared people, I think in all likelihood excessively. Because the standard that was set was counting particles by a method that counted the larger particles, larger asbestos, the longer fibers, which are the ones that are thought to be the most dangerous to health.

Now, the standard didn't include the little particles, so that if you're going to start counting them, then you can't compare it to a standard which didn't count them. If you were to have, in setting the standard, added in the small particles, you would have gotten a much higher level as your legal limit. But what people are doing now is they're counting all the particles and then they're comparing it to a standard set just for the large fibers.

So that's inappropriate, even if the small fibers, let's say, are as damaging as the large ones, which science would indicate they probably are not, because they are much more easily cleared from the lungs. But even if they were of equal toxicity, the standard to compare it to wouldn't be one that just counted the ones larger, it would also include the small one.

So that's what we've got to do, we've got to have standards that are comparable to what people are out there measuring.

Senator Clinton. I couldn't agree more, and I think that Mr. Goldstein's recommendation that we need to consider changes in standards, maybe even need to consider changes in the Clean Air Act, is something that we have to take very seriously.

Mr. Thurston. Well, it's going to be challenging, because as you probably know from your experience on the Senate committee that looks into this issue, what's required is for us to look at published studies of situations and to document very carefully. If we don't have the documentation, then we can't set the standard.

Senator Clinton. I understand that, but I guess it's a chicken and egg issue. I think that's what's so totally frustrating to people, is that we haven't invested enough, in my opinion, we haven't invested enough in doing these studies and in tracking this information longitudinally so that therefore we come up short when it comes time to make standards.

I know we're running out of time, and Mr. Goldstein, would you just comment on the whole standards issue?

Mr. Goldstein. It's clear that this was an unprecedented event, and that therefore, the standards that have been established under the Clean Air Act might not have been fully protective of public health. Among the things that ought to be examined are whether there should be some even shorter term standard for exposure to high intensity bursts of particulate matter on a short standard than the current 24-hour measuring standard, whether there ought to be some standards under the EPA's Clean Air Act regarding fiberglass, and whether other pollutants such as dioxins, which have some 30-year guidance values, but are not part of the formal standard setting

process, ought to be incorporated.

So it's a complex issue, but it is one we believe this subcommittee ought to be thinking about, and that EPA ought to be carefully exploring.

Senator Clinton. Thank you.

Senator Lieberman. Thanks, Senator Clinton.

Before we go on to the next panel, Mr. Goldstein, you were quite critical of the New York City Department of Environmental Protection. They're going to be represented on the next panel. I wondered if you wanted to just say a few more words about your criticism.

Mr. Goldstein. Well, ultimately if you examine, I guess in terms of for the public, they care less which agency is in charge than that some agency is in charge. One of the weaknesses here was that many agencies had a variety of responsibilities, and many agencies did some good work. But there was no single agency in command of the environmental health issues where the public could go that would have regular briefings and that would be in charge of the whole operation.

In our view, after reviewing the New York City charter, which is our city's constitution, the city Department of Environmental Protection had wide-ranging responsibilities to respond to environmental emergencies involving hazardous substances. In our view, those duties were not fulfilled, and therefore, other agencies who would have filled in, particularly with the way in which New York City, again, magnificently in most aspects of the problem, really ran the show at Ground Zero, it made it all that much more difficult for State or Federal agencies to step in in a very active way when Mayor Giuliani and his team was running this operation in the way that the mayor sometimes did.

So with that in mind, it was a responsibility, we believe, of the city's Department of Environmental Protection, working with the New York City Health Department, to coordinate all the agencies. Someone had to take the lead. In our view, the most logical agency to do so would have been the city DEP, to coordinate the work of all these other agencies.

Senator Lieberman. I thank you. I thank all of you on the panel very much. You've contributed very significantly to the work of this committee. The committee will continue to be interested in this matter and try to be constructive in our response to it. If there was every any doubt about the committee's interest, Senator Clinton will make sure that we continue to be interested and respond. I promise you, we will.

I thank you very much for your time.

We'll now call the third panel. Ms. Marianne Jackson, Deputy Federal Coordinating Officer for the World Trade Center Event, Federal Emergency Management Agency; Ms. Jane M. Kenny, Administrator, Environmental Protection Agency, Region 2; Mr. Carl Johnson, deputy commissioner for Air and Waste Management, Department of Environmental Conservation, State of New York; and Commissioner Joel Miele, Department of Environmental Protection, City of New York, who will be accompanied by Commissioner Thomas Frieden of the Department of Health, City of New York.

Thank you all for being here. I ask you if you can, as quickly as possible, to find your seats at the table. I'd ask

folks in the room to try to keep the noise down and we will proceed with the testimony.

The hearing room will come to order. Ms. Jackson, representing FEMA, you are first. We welcome your testimony, and obviously we'd like to hear a response to some of what you heard in the first panel, particularly Ms. Berger's complaint about her inability to get assistance from FEMA.

STATEMENT OF MARIANNE C. JACKSON, DEPUTY FEDERAL COORDINATING OFFICER FOR THE WORLD TRADE CENTER EVENT, FEDERAL EMERGENCY MANAGEMENT AGENCY

Ms. Jackson. Good morning, Mr. Chairman and Senator Clinton. I am Marianne Jackson, Deputy Federal Coordinating Officer for the Federal Emergency Management Agency (FEMA), for the World Trade Center disaster. I thank you for this opportunity to update you on FEMA's disaster response operations in New York City.

Some 3,500 Federal workers were deployed to New York City to support the disaster response. About 1,300 from FEMA and almost 2,000 from other Federal departments and agencies. There are still about 500 Federal workers supporting the city and the State on this recovery.

As you know, FEMA's mission is to reduce the loss of life and property protect our Nation's critical infrastructure. Our success depends on our ability to organize and lead a community of local, State, and Federal agencies and voluntary organizations. We provide the management framework, the financial resources and the Federal assets to help State and local governments.

Immediately following the attacks on September 11th, the importance of air quality and emergency responder health and related issues emerged as critically important. Initially, we attended daily meetings with the State and the city to discuss a wide variety of issues including air quality. We worked closely with EPA, the New York City DEP and the New York State DEC.

Under the Federal Response Plan (FRP), we mission assigned, that means tasked, and provided funding to EPA to conduct air samplings as well as a number of other missions. The health and safety of emergency responders was of paramount importance. Immediately, various Government agencies, such as OSHA, NIOSH, HHS, EPA and State and city agencies, were dispatched to the site.

Federal personnel and teams deployed into the disaster area, such as the Urban Search and Rescue Teams, the U.S. Army Corps of Engineers experts and medical personnel from the Department of HHS arrived with the necessary protective gear. We were able to address immediately heath concerns involving emergency responders through our coordination with HHS and its Public Health Service. Five Disaster Medical Assistance Teams, which are MASH type hospital units, were brought in, four Disaster Mortuary Teams were brought in, and one Mental Health Assistance Team was brought in, in addition to other assets to address health concerns.

Long-term health monitoring was initially funded by FEMA, and that's what Dr. Kelly from the fire department described.

We also included initial tests on 4,000 State emergency workers working at Ground Zero, and CDC will continue that effort.

In another critical area, we provided funding to address the long-term mental health of responders and others who may have been affected by this tragedy. We coordinated with the National Association of Fallen Firefighters to work directly with the Fire Department of New York (FDNY) on crisis counseling, and we also funded Project Liberty, at $23 million at this point, which is a long-term mental health disaster recovery program administered by the State of New York Office of Mental Health.

Because of the amount of dust and debris that resulted from the building collapses, cleanup of residences and the surrounding areas has been a major priority. We provided almost 6,000 disaster housing assistance grants to both renters and owners who lived in the vicinity of the World Trade Center. The rent money, we gave renters 2 months rent and owners 3 months rent, so they could go some place else and live until they were able to get back into their apartments, which in some cases were inaccessible for quite a while. We also provided cleanup money and we also reimbursed people who stayed in hotels in the first couple of weeks.

New York State administers a program called the Individual and Family Grant Program. That program provided grants to people to buy HEPA vacuum cleaners, air filters and air purification systems for residences. In addition, the voluntary agencies provided similar cleanup gear for people. The voluntary agencies were also very active and helped with cleanup for the special needs population.

We worked with the city Department of Health through our joint outreach teams in distributing to residents flyers containing recommendations on actions needed in order to be able to safely reoccupy buildings and homes. This flyer addressed cleanup and safety and health concerns and was developed to facilitate individuals moving back into their homes.

The Small Business Administration offers two kinds of loans, economic injury loans, and that's for businesses who lost business, to help them stabilize and get their business back. But they also provide what are called physical loss loans. They provided over 800 loans to both businesses and individuals for physical loss. So that meant to repair and in most cases, it meant there was money for cleanup.

Eligible Government clean-up costs and monitoring activities are being funded 100 percent through FEMA's Public Assistance program, which is aid to Government entities. For example, the New York City Board of Education's cleanup of the schools near Ground Zero is an eligible expense, and they will be reimbursed, as is the cleanup of city vehicles such as fire trucks and police cars.

All of FEMA's work has been created out of the authority the Environment and Public Works Committee has provided through the Stafford Act. This legislation has served us well and has provided the necessary authority and flexibility to empower us to do our best. The disaster response and recovery in New York City will be a long-term process, but the President has said that we will provide whatever assistance is needed to get the

job done. I can assure you that FEMA will be here as long as needed.

Senator Lieberman. Thanks, Ms. Jackson, for all FEMA has done. Do you want to take a moment to respond to what Ms. Berger expressed as a concern?

Ms. Jackson. Yes, I gave Ms. Berger my card, and actually she and I had met at one of the many meetings that we've had down here since September 11th. I'm going to need, naturally I'm very concerned about her interaction with FEMA. She and I will talk later. We have to address these situations on a case by case basis.

As I mentioned in my testimony, we have been giving people money to clean up, so they can get back in. Additionally, if someone has been given rent money and they come to us and say, my doctor is saying I shouldn't move back to my residence because of a health condition, because psychologically, it's very, very difficult for me, then we're going to give them additional money so they're not forced to move back into the area.

Senator Lieberman. I'm glad you're going to work with her and talk with her. Again, I appreciate what you've done. You're absolutely right, FEMA is created by statute that comes out of our committee and the documentation of the assistance you've rendered here is impressive. I thank you.

Ms. Kenny, you're here representing EPA. Thank you for that, and obviously we want you in your testimony as best you can to respond to some of the criticism of EPA, both from Congressman Nadler and from Dr. Thurston during their previous testimony.

STATEMENT OF JANE M. KENNY, REGIONAL ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY, REGION 2

Ms. Kenny. Thank you, Mr. Chairman and Senator Clinton. I appreciate the opportunity.

I'm Jane Kenny, Region 2 Administrator. I do welcome this opportunity to discuss our response to the tragic events of September 11th.

Today is February 11, 2002, a mere 5 months after this unprecedented event in our Nation's history and 5 months of incredibly intense work. So now we now reflect on the impacts of the attacks and the extraordinary efforts so many have made. EPA and our Federal, State and city partners have all played important roles in the protection of public health and the cleanup. Today, we look toward the future and the ultimate recovery of Lower Manhattan. So I appreciate this opportunity to do that.

EPA and other agencies have taken over 10,000 samples of dust, air, drinking water, and storm water runoff at and around the World Trade Center site, at the Fresh Kills landfill and in New Jersey. We also conducted additional air sampling within five boroughs.

EPA has tested for asbestos, fine particulate matter, lead and other metals, volatile organic compounds, dioxin, PCBs and other substances that could pose a threat to the public and to the workers at the site. Fortunately, the vast majority of our tests continue to find levels of these contaminants below

standards or guidelines set to protect public health. It's important to emphasize, as we have from day one, that the risks are different for response workers at the World Trade Center site. We have repeated said that these response workers should wear respirators and other protective gear.

We have found asbestos fibers in the outdoor air and dust samples. Out of more than 5,500 air samples taken at and around the site, only 15 have exceeded the Asbestos Hazard Emergency Response Act standard we use to determine if children can re-enter a school building after asbestos cleanup. Of those 15, all but 4 were recorded before September 30.

Where we found elevated levels of asbestos in the dust EPA used large HEPA vacuum trucks to clean sidewalks, local parks and children's sand boxes. EPA has led the effort to monitor the outdoor environment with support from New York State while the city has taken the lead for the reoccupancy of buildings.

EPA has been testing for numerous volatile organic compounds or VOCs such as benzene at several sites within and near the perimeter of the World Trade Center site. To protect workers, EPA takes daily ``grab'' samples of VOCs at ground level where smoke plumes have been sighted. These samples provide a snapshot of worst-case exposure. The samples are immediately analyzed at EPA's mobile laboratory at the site, allowing us to relay the results directly to the fire department.

EPA standards and guidelines are set with an ample margin of safety to protect public health. Our grab samples from Ground Zero have found the presence of benzene at levels that have exceeded Federal guidelines. That's why we continue to urge workers to wear their respirators.

However, EPA air samples of pollutants such as benzene taken at the perimeter of the site find levels that are very low or non-detectable. Dioxin levels were generally below health-based guidelines. Once the fires were diminished, concentrations of several chemicals declined in most cases to non-detectable levels, even at the work site.

Fine particulates, those smaller than 2.5 microns with a few exceptions early on, have also been below the level of concern. We do know that materials in construction dust and smoke can be irritants. They can cause more serious reactions in people with respiratory problems or asthma. Again, this is one of the reasons we have recommended that workers wear respirators and impacted homes and businesses be properly cleaned. Sensitive groups have been advised by the city health department and the CDC to take special precautions and consult their physicians if they are experiencing symptoms.

We and the city have tested drinking water and water quality in the Hudson and East Rivers. All samples of drinking water met Federal standards. Runoff following heavy rain on September 14 did show some elevated dioxins, asbestos and other pollutants. Followup sampling found levels back to those normally found in area waters.

Almost immediately after these attacks, President Bush declared a Federal disaster, and that activated the Federal Response Plan. Acting on FEMA's mission assignments, EPA is the lead agency for hazardous waste disposal, for monitoring the ambient environment, for coordinating sampling data, for

managing worker and vehicle wash-down operations and initially supplying thousands of respirators and other personal protective equipment. On September 11th, EPA provided a flyer to FEMA for distribution at Ground Zero that emphasized the potential from asbestos and urged workers to wear protective gear. By September 20, EPA had set up worker wash-down operations at the site, at which flyers were distributed and signs posted recommending the use of respirators and other protective gear.

In October, EPA began two scientific investigations, a health risk evaluation and a comparative toxicological study. They will help us better understand the possible health risks to people who may have been exposed to various pollutants following the disaster.

In addition, we have supported the Agency for Toxic Substances and Disease Registry and the city health department in their study of residences impacted by the World Trade Center collapse. We are committed to helping residents and businesses and employees in Lower Manhattan address their concerns about the indoor air.

From the start, EPA has been committed to sharing the results and explaining what they mean. I must say, under incredible circumstances, having witnessed the attacks and having been evacuated from our Lower Manhattan offices, EPA staff began sampling, analyzing, interpreting and conveying environmental data to the first-line response agencies, the press and the public. Those results are available in summary form every day on our website and in detail at our offices in Lower Manhattan.

As we look to the future, we will work with our Federal, State and city partners and Congress, on science-based approaches that ensure that public health is protected. I have to say, I'm proud of the many dedicated people at EPA who have worked tirelessly to protect the health of all New Yorkers in the wake of this unprecedented event.

Mr. Chairman, thank you for helping me give you the information that you need.

Senator Lieberman. Thanks, Ms. Kenny. We'll wait until the question and answer period, I'll come back to some of the questions that have been raised.

Mr. Johnson, on behalf of the State. Thanks for being here.

STATEMENT OF CARL JOHNSON, DEPUTY COMMISSIONER, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Mr. Johnson. Thank you, Mr. Chairman, thank you, Senator Clinton, for providing the New York State Department of Environmental Conservation with the opportunity to testify about our efforts to assist the residents and businesses of Lower Manhattan to recover from the devastation that was caused by the destruction of the World Trade Center.

We share with Governor Pataki and our sister agencies the highest level of commitment to managing the cleanup, and we appreciate the excellent coordination among all levels of Government involved in this effort. I'm going to be brief, because our role primarily has been one of support and collaboration with EPA and the city agencies. I do want to say

that we often engage in friendly collegial competition, and in some cases, we oversee city agencies, in some cases EPA oversees our programs. There are opportunities for friction there.

Throughout this process, I have never seen Government agencies work together, collaborate, confer, communicate at the levels that we have been involved in since September 11th. It started immediately and has been ongoing through that time. I think to the extent that we have success stories to tell, it's as a result of the dedication of the professionals in all of our agencies.

As soon as possible after the attacks the New York State DEC began to work with the other agencies to monitor and assess the environmental impacts from the devastation. We all have slightly differing roles. We established a multi-jurisdictional air monitoring group to coordinate that effort, which initially focused on worker safety and then began to work out from the site to try to learn what we could about the conditions for the residents and the workers returning to the area. We did identify specific monitoring needs and we put them in place in the process of collecting that information. Ms. Kenny has spoken to that, I'm sure we'll talk in more detail about that.

Certainly, we had an existing PM2.5 and PM10 monitoring network. We expanded on that to try to give us more information about the conditions in Lower Manhattan and throughout the city. We adapted a number of those monitors for asbestos because we had information very early on that asbestos was present in one of the towers. It was something that obviously would be of concern to the citizens of New York.

We worked together with EPA in consultation to determine what standard we could use. Dr. Thurston I think spoke ably to the question of apples and oranges. There is no outdoor quality standard for asbestos, because it's never happened before. We worked very, very carefully to try to determine what we could do that was already scientifically tested and acceptable and apply it to an outdoor situation. It was a bit of a struggle to do that, but we have continued to apply that, and I think we can say with certainty on the outdoor air quality that we have not seen issues with regard to asbestos, a few exceedances or excursions in the early days, and since then, we do not believe that breathing the outdoor air causes any issues.

The particulate matter, we have sampled for both PM2.5 and PM10 is ongoing, as I said. We expanded that. We added five new monitoring sites in Lower Manhattan, both continuous air quality monitoring devices, which gives the results people are looking for, I think on more of a real time basis, and filter based, which are more sensitive, more analyzable, can be archived and re-examined later on. But obviously they don't give you the air quality results that you want in that day.

To date, as Ms. Kenny said, in the particulate levels in Lower Manhattan, as well as throughout the rest of the city, we have not seen significant increases. Certainly in the early weeks after the attack, there were elevated levels of particulates. As we hoped and expected has happened, those have come down.

We are also involved in the field work for dioxin monitoring. We know any time you have a source of uncontrolled combustion, you can certainly expect to see some levels of dioxins. Folks were worried about that. We established the monitoring for that as well, in conjunction with EPA. We have seen similar results, that in the early days and when the fire was still burning, we saw some levels of dioxins that have since fallen off. That gives us some confidence.

The concerns about irritations and odors in the area are certainly the trickiest when it comes to air quality. We spent some effort with EPA and some of its specialized staff in trying to determine additional monitoring that could be done to look for some of the irritants and to study what sorts of previous models we might learn from. I think one of the things we learned is we haven't really had a long-term building fire before to study and to determine what comes from these. Most of our models have been in other areas.

So we have established additional contaminants that we began monitoring for. Again, we primarily service monitors and provide the information to EPA. We're going to maintain those activities until the effort is completed and until we can assure people that we have some sense of what came from the pile and what effect it may have had on their health.

I would be remiss in speaking before the Senate if I didn't mention that the State will soon be before both Houses looking for assistance in solving an issue that we have as a result of the World Trade Center with regard to transportation conformity and the Clean Air Act. We're working to assure the environmental community and the citizens that while we do believe we need some relief in the planning requirements under that, that we by no means intend for it to have any negative environmental or air quality impacts whatsoever. We're working aggressively and frequently with the environmental community to bring forward a proposal that we believe both Houses would be able to support.

I did want to speak just briefly to the issue of the diesel truck emissions that's been raised a couple of times. The State has been using its authority under a State idling regulation to prevent idling. We've been as aggressive as we can be in making the drivers turn off the engines when they're in an idling situation. It's not allowed for more than 3 minutes in the city.

We have also been working in a multi-jurisdictional effort to try to bring relief to the site in the form of both lower sulfur fuel for the site and to try to bring some particulate traps and other control technologies to some of the equipment of the site. We didn't begin this until January or so, we are working very diligently with virtually ever city agency that has any responsibility at the site and with the Northeast States for Coordinated Air Use Management and EPA. We're trying to bring a proposal forward. We have found that this is very complex, but we are still moving forward on trying to bring some relief from the ongoing operations at the site.

I just want to thank again the subcommittee. We appreciate being here.

Senator Lieberman. Thank you, Mr. Johnson.

Commissioner Miele, thank you for being here, and I would

urge you to respond to the critique from Mr. Goldstein, and to some extent from Congressman Nadler, who said in his statement that EPA had delegated authority to the city for indoor environmental consequences and had not followed up to make sure that the city's response was appropriate.

Dr. Miele. Senator, if I may, the city has two responses. Dr. Frieden would like to lead off, if that's all right with you.

Senator Lieberman. OK. I'd urge you to try to be as concise as you can, because time is running on and we've got a final panel to go.

STATEMENT OF THOMAS R. FRIEDEN, M.D., COMMISSIONER, NEW YORK CITY DEPARTMENT OF HEALTH; ACCOMPANIED BY: JOEL A. MIELE, SR., COMMISSIONER, NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Dr. Frieden. Good morning. We do appreciate the opportunity to be here today.

Since being sworn in as health commissioner by the new administration, less than 2 weeks ago, I have reviewed the activities of the New York City Health Department and other agencies since the first day of the disaster. I would second what my State colleague has said. One of the most vivid pictures to emerge is one of unprecedented cooperation between local, State and Federal health, environmental and occupational agencies. The teamwork is quite extraordinary.

Following the attack, the City Health Department had a multifaceted role. The health department immediately established systems to monitor first, emergency departments in the immediate vicinity to assess acute injuries; second, hospital staffing and equipment needs; third, illness and injuries among rescue workers; and fourth, unusual syndromes that might represent a bioterrorist event.

Other responsibilities included ensuring water and food safety in the immediate area, conducting rodent and vector control, initiating a worker safety program and providing regular advisories to the public and medical community. The Department also facilitated development and coordination of environmental sampling plans.

Many individuals were exposed to large amounts of smoke, dust, and airborne substances. The potential release of contaminants during and after the disaster was a primary public health concern from the beginning. Air monitoring was established immediately, and continues. The Health Department reviews the numerous air quality, debris sample results and personal air monitoring tests being conducted by various agencies. The data from air quality tests thus far have been, in general, reassuring. None of the test results done to date would indicate long-term health impacts.

The numerous substances of potential concern have led to some confusion about health effects over the short and long term. Some substances, such as the particulate matter from the dust or smoke in the air, are irritating but are not expected to have long-term health effects. Other substances, most notably asbestos, are not expected to have short-term effects, but if elevated over long periods of time can cause serious

health effects.

Asbestos was a known building component in the World Trade Center. Asbestos levels in the air at and around the site in the first few days were elevated. Fortunately, since that time, except for a few transient spikes found in outdoor air sampling, asbestos levels have been low and within standards.

With funding from FEMA, the Department of Health and the Federal ATSDR conducted a study of both air and dust samples taken in November and December of 2001 at 30 residential buildings in Lower Manhattan. As soon as we received the final results from ATSDR, we released them to building residents and owners and to the public. We will continue to release results as soon as they become available from ATSDR.

This study showed no elevated levels of asbestos in indoor air. Dust sample tests showed low levels of asbestos in some samples and fiberglass in some other dust samples. Asbestos and fiberglass can be a problem if they become airborne. Airborne fiberglass can cause cough and skin, throat and eye irritation. While these findings are not unexpected, they underscore the importance of proper cleaning to minimize exposure, as the DOH has repeatedly emphasized.

I would add that the use of wet wiping is an important and effective means of making our homes safe, and statements to the contrary are unhelpful.

The standards used are conservative. For example, for asbestos in outdoor air, we are using the indoor air quality standard for reentry into a school after asbestos removal. Stringent standards are also being used for other substances in outdoor air, such as dioxins, identified at the perimeter of the site. Both duration of exposure and concentration of the substance are important to determine health effects.

Many standards which we are applying were based on exposures for prolonged periods of time. The long-term health risks associated with short-term exposures are not well documented, but are generally believed to be quite low.

As fires at the WTC site burned far longer than anticipated, many residents living and working in the community, in particular rescue workers, have reported health effects, such as acute breathing problems, worsening of asthma, eye, nose, and throat irritation, nausea, and headaches. Many residents also continue to experience significant psychological and stress-related illness and anxiety.

Students of Stuyvesant High School, who returned to their school on October 9, 2001, reported similar complaints. A DOH analysis shows that the average daily rate of headaches, respiratory, skin, eye, and throat complaints at Stuyvesant was higher than in the previous year and higher than in four other New York City public high schools. The data also show that complaints decreased from October to November 2001. We will continue to monitor this situation.

The department has been working with the Centers for Disease Control and Prevention to develop a protocol for a WTC Registry. Since September 11th, we have all had to live in a world of greater uncertainty. While we know that the air meets safety standards today, we cannot state unequivocally that there will be no long-term health effects of exposures on or around September 11th. We simply do not know. For that reason,

rapid funding and implementation of the registry is particularly important. The registry will enable scientists to evaluate the long-term health effects as objectively and comprehensively as possible.

But with every day that passes, implementation of a registry becomes more difficult. We therefore urge our colleagues to avoid any further delay in this very important project which you have spearheaded.

Finally, the City Health Department recognizes residents' concerns and will continue to work closely with local, State and Federal agencies to monitor air quality and to inform the public of findings as soon as they are available. Together with the City Department of Mental Health, which is also under my jurisdiction, we are addressing residents' mental health concerns by promoting the ongoing Project Liberty program, a statewide disaster-recovery initiative that offers free crisis counseling, education and referral services. DOH will continue its community outreach and education efforts.

Now I would like to turn to Commissioner Miele.

Dr. Miele. Thank you, Dr. Frieden, Senator Lieberman and Senator Clinton. It's a pleasure to be here. My name is Joel Miele, and I'm the commissioner of the New York City Department of Environmental Protection.

In addition to the DEP's operation of the city's sewer and water systems, which by the way withstood the attack well, our expertise in regulating asbestos in New York City was a significant portion of our responsibilities following September 11th. Since 1985, DEP has been the New York City agency with responsibility for regulating asbestos abatement. Starting September 12, DEP operated a network of outdoor air monitors that have been used for monitoring outdoor asbestos levels. Aside from repairing water and sewer infrastructure, assessing and mitigating risks caused by the presence of asbestos-containing material has dominated DEP's work in responding to the Trade Center attack.

Since September 11th, DEP or its contractors analyzed 3,060 samples from 37 outdoor monitoring sites in Lower Manhattan; 500 samples collected adjacent to the four schools in the vicinity of the Trade Center; and 328 samples taken in the four boroughs of the city outside of Manhattan. The map and all sampling results to date from the sites shown on this map are available to anyone on DEP's website: www.nyc.gov/dep.

Of these samples, only 9 of the total of 3,864, or \2/10\ of 1 percent, exceeded the Federal re-occupancy standard for indoor air. These nine samples were all taken in the vicinity of Ground Zero. As Commissioner Frieden noted, there is no established standard for asbestos in outdoor air. Unlike carbon monoxide, nitrogen oxides and other gases whose presence in outside air is regulated under the Clean Air Act, asbestos is a once-prevalent building material, and previous work at standard-setting has focused on establishing safe levels for asbestos within buildings.

On September 12, when my colleagues and I at all three levels of Government were creating our monitoring networks, we knew that there were no reliable, scientifically based, acceptable standards that would tell us what level of asbestos in outdoor air might be considered ``safe'' or ``unsafe.''

Therefore, we opted to use EPA's indoor post abatement re-occupancy of schools standard as our threshold level of concern since we felt it was more protective.

Let me briefly explain our sampling methodology. The samples are collected on filters and examined under Phase Contrast Microscopy utilizing a specific method developed by the National Institutes for Occupational Safety and Health. The PCM analysis counts all fibrous particles, including asbestos. PCM sample results are compared to the clearance/re-occupancy standard for indoor air following an asbestos abatement project. This standard is 0.01 fibers per cubic centimeter. Samples found to be above this standard are re-examined using Transmission Electron Microscopy. The TEM analysis identifies the type of particles collected. TEM results are compared to the clearance/re-occupancy standard for indoor air in schools after an asbestos abatement project. This standard is 70 structures of asbestos per square millimeter. The standard was established pursuant to the Federal Asbestos Hazard and Emergency Response Act, also known as AHERA.

Based on all Federal, State and local test results, public health experts have consistently expressed confidence that, based on sampling, airborne asbestos levels do not pose a threat to human health. Health professionals have stated that short-term exposure to airborne asbestos, at levels equal to or lower than 0.01, carries an extremely low risk of causing asbestos-related illness.

Before allowing occupants in any residential or commercial building near the Trade Center site, the city's various agencies, acting through its Office of Emergency Management, required building owners to take the following steps. Assess the building's structural strength and stability using qualified professionals. Restore gas and electrical service. Restore building water service, including flushing, re-filling and cleaning roof tanks where necessary. Assess the presence of hazardous materials such as asbestos, and remediate as required under applicable city regulations using qualified professionals. Finally, inspect, clean and repair mechanical and HVAC systems.

While property owners were accomplishing these tasks, DEP and its sister agencies, again acting through the Office of Emergency Management, assumed responsibility for cleaning streets, sidewalks and common areas so that there was a safe outdoor environment to reach the buildings for contractors and workers who were retained by owners and managers to effect all necessary exterior and interior cleanup of private buildings. To assist property owners, DEP engaged in the following tasks, among others.

Developed and distributed advisories to building owners and occupants; established HELP lines for concerned owners or tenants to respond to complaints or concerns about proper abatement procedures for contractors; provided telephone consultation to building owners, contractors, consultants and tenants related to asbestos cleanup; performed site inspections and conducted building surveys; reviewed sampling data submitted by building owners, their contractors and consultants; reviewed the scopes of work for cleanup of asbestos-containing material; and developed emergency

certification procedures and offered daily certification exams to ensure a properly trained and qualified work force was available.

Although city, State and Federal agencies have provided oversight and guidance on interior cleanup, that task remains the responsibility of building owners and occupants. For example, some building owners identified the presence of asbestos-containing material during their assessment for hazardous materials in areas of the buildings under their control. Once material is identified as ACM, New York City rules require that a licensed contractor with certified asbestos workers perform the cleanup activities.

As noted above, DEP technical staff has been continuously available to assist in the development of plans for handling asbestos cleanup activities. At the completion of the cleanup activities, the city's regulations require clearance air sampling by licensed professionals prior to allowing re-occupancy of areas where asbestos work had been performed.

The city, through the Office of Emergency Management, looks forward to working with Senator Clinton in developing an improved indoor air quality program. With respect to the question that was raised earlier by Congressman Nadler and Mr. Goldstein, the issue of the DEP, the agency's name tends unfortunately to be a little bit of a misnomer. The agency is primarily involved in running and operating the water and sewer systems of the city of New York. The staff available for asbestos and hazmat, while adequate except in the case of a catastrophic such as occurred here, has always been adequate for the services that we've needed, whether it was for asbestos abatement or the occasional hazardous materials situation that arises.

I appreciate the opportunity.

Senator Lieberman. Thanks, Commissioner. So did EPA federally make a mistake in reaching a judgment that the city environmental protection department was in charge of indoor air quality?

Dr. Miele. No, I think what they really meant by that was that the outdoor air quality had been checked. It was very clear to us in our daily meetings, and we met, all three levels of government, each day for as much time as it took to understand what was occurring in the past 24 hours and to decide what we were going to do in the next 24 hours.

But essentially what happened, as you've heard here already, the outside air immediately started clearing up dramatically. There was a steep drop in the curve. By the time we permitted people to go back into the interior buildings, we were very comfortable that the level of materials outside were well below the regulatory standards.

Consequently, when the buildings were entered, they were entered not by the occupants, but by qualified experts to determine whether there was an air problem within the buildings or not, and whether cleanup was required. That work was done in each case. What we did after that is, when the public was allowed back in, after we were comfortable with the material that had been done and we knew the buildings had been cleaned, the owners then permitted reoccupancy.

If any tenant had any question, they could call us, did

call us on occasion. We would come out, we would question the results, take a look at the results of the cleanup that had been done, and the air testing that had been done, and if we had any questions, we did our own air testing. There were only minimal situations where that occurred, and in each case where it did occur, we were comfortable that the air was acceptable.

Senator Lieberman. So you're testifying that----

[Interruption from audience.]

Hold on, we'll come back to you.

You're saying that every building was tested, every building had its indoor air tested before people were allowed to go back in.

Dr. Miele. That's the city regulation. That's correct, sir.

[Interruption from audience.]

Senator Lieberman. We're going to come back to you. Hold on a second.

Ms. Kenny, Congressman Nadler made some very direct and serious challenges to the EPA, and I want your response. The first is, that EPA Administrator Whitman misled the public on September 18 last year, when she said she was glad to reassure the people of New York that their air is safe to breathe and their water is safe to drink. She made the statement without the indoor data necessary to make such a pronouncement.

Dr. Thurston seemed at least in part to corroborate Congressman Nadler's statement when he said that EPA gave assurances prematurely, before there was adequate evidence to justify them. Do you agree?

Ms. Kenny. The procedure under this kind of an emergency, and obviously, we've never experienced this kind of emergency before, but the Federal response plan, once the President declares a national emergency, the Federal response plan is what the Federal agencies follow. We basically decided as our agencies got together, there was a mutual agreement with the city of New York, and with the Federal agencies, what each role would be, trying to use our resources in the best possible way, as efficiently as possible in terms of getting people out to do the work that needed to be done.

It was agreed that EPA would monitor and immediately began to set up monitors. I have to say that we used the most extensive data ever. We never had more extensive testing than was done in this particular case. That was the statement that was made, was basically about walking around in Lower Manhattan. We always said that if you were a sensitive population or if you were right on the pile, that you should protect yourself or you should see a physician. But in terms of what the others have testified to, the outdoor air that we were testing was showing low- or non-detectable levels, except for a couple of spikes which I mentioned in my testimony.

So I think that there was a lot of confusion. I think people understandably were confused about what exactly was safe and not. I think there is a lot of uncertainty. We never have dealt with this kind of issue before. Don't forget, there were seven stories of debris that people were working through at that particular time, right after this event.

I think we just have to remember going forward who the enemy is. The people in public service were basically trying to do the best that they could to make the kinds of determination

to protect the public health. Obviously, we need to continue to work together. We need to continue to work as Federal agencies, we need to work with Congress, we need to work with the city to determine what the next steps are and how to protect people that are feeling unprotected and uncertain right now.

Senator Lieberman. So you would reject the criticism that Administrator Whitman gave premature reassurance about air quality before it was justified?

Ms. Kenny. Again, I think what I want to make sure is that what Administrator Whitman was talking about was the outdoor air that was based on extensive sampling, air quality monitoring in Lower Manhattan and the boroughs, at the Fresh Kills, all those samples that were coming in. We can show you what we have seen, and obviously in terms of what we didn't know when those buildings came down with those tremendous fires and etc., we didn't know what that air would be like. After a certain amount of testing, we saw that the levels of the particulates that we were testing for, the asbestos, etc., they happened, they were based on data collected using sound science.

We always said, and I know I said it, that people right on the pile should protect themselves, and people that are vulnerable, that have asthma or are prone to that should see their physicians. But in terms of that outdoor air that we were talking about, yes.

Senator Lieberman. I'm hearing you say that while the Administrator's comments may have been confusing, they were not intentionally misleading.

Ms. Kenny. Absolutely. I think there was, again, I don't know whether the comments were confusing to everyone or not. I know that people are confused about what is healthy for them. I'm a parent, I understand that. It's certainly something that is not hard to imagine. It was a scary time; people were hearing different things.

In the EPA, we did countless public meetings. We spoke to the press every day. We were constantly saying what I've said to you. But sometimes you can't hear this, because it really is so terrifying. You want to know, you want to have certainty.

I have a scientist with us today from EPA who can talk about the science. We can talk about--there are just so many emotional issues attached to it. When we actually remember what we're talking about, there was not a lot of immediate concern about being at risk. We know there was a risk posed by the events of that day.

Senator Lieberman. Let me ask one more question, and then yield to Senator Clinton. Congressman Nadler said some very troubling data, just in yesterday's St. Louis Post Dispatch, about the U.S. Geological Survey, using best detection equipment and methods, found pH levels in World Trade Center dust that are ``as corrosive as drain cleaner'' and passed this information along to health experts at the EPA. The argument, the charge here is that the USGS data was not released by EPA nor apparently were the environmental agencies' own test results on the dust. That's a serious charge. That last quote is not from Congressman Nadler, but from the reporter, Pulitzer prize-winning environmental journalist, Andrew Schneider.

What is your response to that?

Ms. Kenny. Yes, again, there were, certainly it was consistent with our findings that there was a high level of pH, that was alkaline, that is an irritant.

Senator Lieberman. Do you agree that it's as corrosive as drain cleaner?

Ms. Kenny. I'm sorry, I can't address that. I don't know.

But it actually does present one explanation why residents felt the kind of irritation that they felt. It was consistent with all the information. Our understanding was that USGS did publish this information and it was available on their website, etc. We didn't do that kind of sampling, because that had been done.

Senator Lieberman. So you're saying, from your knowledge, and I ask you to go back and speak to the folks in Washington about this, you were not intentionally concealing this information, it was just assumed it was already published by the U.S. Geological Survey?

Ms. Kenny. Absolutely.

Senator Lieberman. Is that what your answer is?

Ms. Kenny. Yes, that's my answer.

Senator Lieberman. OK, Senator Clinton.

Senator Clinton. Ms. Kenny, Congressman Nadler has sent a letter as of January 23 to Administrator Whitman with a lot of the questions that flow from his work and the concerns of our constituents. Would you reassure or I guess assure this committee that you will do your best efforts to get that letter responded to?

Ms. Kenny. Absolutely, Senator.

Senator Clinton. I think that Congressman Nadler deserves a rapid response, and it's been some weeks since then.

With respect to the issues that Senator Lieberman was discussing with you, I think part of the problem that we confront is the competing information and the feeling that somehow this information is not being made available, or that the EPA is not providing a contrary point of view, so that people can have an opportunity to make a judgment. That's not only true with respect to the U.S. Geological Survey, but also as Congressman Nadler pointed out, the Ombudsman of the EPA, Robert Martin, who has made, as I'm sure you know, a number of charges and challenges about the EPA's work.

I would appreciate being given a very clear explanation of the Ombudsman's points of view and concerns with a response from the agency, so that we can evaluate it. I know that Congressman Nadler joins me in that request.

I think one of the issues that is just still very confusing and frustrating, and it goes to the authority and sharing of authority between the EPA and the DEP, and that is, the burden that is placed on the first instance on the city to supervise indoor air, and then in the second instance, it really devolves onto the landlords and residents to have to do a lot of that remediation themselves.

Commissioner, in your response, and I know we had some vocal audience members who responded to what you said, you said that's the city regulation. But can you sit there today and tell us that every landlord and every building complied with the city regulations?

Dr. Miele. No, I can't tell you that. But the reason for

that, in large measure, has been the fact that we've let people back into the buildings, that is to clean up the buildings, and then when we're comfortable that they've got the tests, let people back in. One of the things we did to try and facilitate it was to let people get back in when we were comfortable that they had cleaned up the buildings but before they had submitted the formal permit application to us and gotten the permits from us. Same reason why we tried to expedite the licensing of personnel who could be qualified to do the cleanup.

We were overwhelmed, obviously, by the amount of area and square footage that we obviously had to deal with. We had to come up with some methodology to do that. We have the addresses for each of those buildings, and anyone who has a question or an inquiry as to whether their building was in fact cleaned up could certainly get in touch with our agency and we'd be very pleased to provide them with the information. Obviously, if anyone fell through the crack, we certainly want to get at that and find out how that happened and see that it is corrected.

Senator Clinton. I appreciate that, Commissioner. One of the recommendations that I've made is that we work together on an indoor air quality task force. Because I do think that residents and people who work downtown deserve accurate information. Given the overwhelming nature of the demands that were placed on your department, the fact that I think you very forthrightly have said, you're a sewer and water department primarily, so we may need to look not only at what was done but what could be done. I think that residents and others need to be sure to get that information.

What number would people call to have their building checked?

Dr. Miele. They can call 718-DEP-HELP.

Senator Clinton. Seven one eight, DEP-HELP?

Dr. Miele. DEP-HELP, that's our help line. If they have any difficulty with that whatsoever, they can call my office. My office is 718-595-6565. We'll direct them down to air resources and they'll take care of the problem.

Senator Clinton. I think you're going to have some calls, Commissioner.

Dr. Miele. That's fine. That's what we've been encouraging. We also have a website, and you can get to us at the website, also.

Senator Clinton. What's that website?

Dr. Miele. That website is NYC.gov/dep.

Senator Clinton. OK.

The last question that I have, because I know we're going to need to followup with both EPA, the city and the State. But I just wanted to direct the last question to Ms. Jackson with FEMA. You know, when I look at the numbers of requests that came in for assistance and those that were deemed ineligible, it seems like quite a high proportion were denied. I know that in the Senate, the Small Business Administration Committee chaired by Senator John Kerry has been concerned and complaining that it didn't appear that SBA had acted with the same kind of dispatch or results as we saw in other disasters.

What I would like as part of the hearing record, Ms. Jackson, if we could get some comparative figures. Because just the figures we've gotten so far and the complaints that my

office receives suggests that perhaps we're not getting the same kind of eligibility numbers in the wake of this disaster as we have in others. I would very much like to get that information.

Do you have an immediate response to that?

Ms. Jackson. We would be delighted to provide it for you, Senator. We've been urging people to call the FEMA 800 tele-registration number. Many of them are calling, over 59,000 have called to date. Some of them who are calling get referred to other programs, based on what they tell us, they're referred to disaster unemployment assistance or the regular State unemployment assistance. It depends on what all their requirements are at that time.

The Small Business Administration is a sister agency. We work with them on disasters all the time. They are very, very fast. They got here quickly, they set up sites in Chinatown.

But I will be happy to provide you with that followup information.

Senator Clinton. I thank the panel, and I know that we've got many other questions. I hope we're going to be able to have a followup hearing based on what we've learned today and when we evaluate the additional information we've received. I appreciate very much Senator Lieberman's attention to these issues.

I think we do need some changes in the Stafford Act. I think we do need some changes in the way we address these disasters. I don't think it's appropriate to put the burden so completely on residents and owners as we have, since it raises public health issues that affect people more generally. So I'd like to work with you, Senator Lieberman, on these issues.

Senator Lieberman. Senator Clinton, I think you're right on target. I must say that this was obviously an unprecedented event. The city and the various emergency response efforts seem to me to have been extraordinarily well coordinated. There were some practice, if you will, done under Federal programs earlier on. I'm not convinced that the environmental response was as well coordinated to this unprecedented experience as the rest.

I think we've got an obligation to work with you, Federal, State and local agencies, to make sure if, God forbid, this ever happens again anywhere, that we have the same level of coordination and that it is long term, it is immediate but it is also long term because of the health consequences. We're not organized here to have a lot of questions from the audience. I think Senator Clinton got at one of the questions broadly that concerned folks. I've got another that I'm going to ask you, Commissioner Miele.

But I would invite people who are concerned and feel we haven't answered the questions, submit them to Senator Clinton and me. We'll put them to the witnesses and ask for their responses in writing, which will become part of the record.

Here's the final question, which did come from somebody who is here, a resident, I presume. Why did the DEP accept landlords' claims that there was no asbestos present when aggressive air monitoring was not performed and some of the independent tests done by tenants in fact did show asbestos?

Dr. Miele. Well, that's an individual decision. But the bottom line is that if there was any break-in or entry,

fracture of glass, open doors or what have you, then there's undoubtedly dust throughout the building. If there was dust throughout the building, the owner had to hire someone to evaluate that who was competent and professional, and he had to hire a certified cleanup team.

The bottom line is that if there was a building that was closed that did not get anything in it, it's conceivable that if an air monitoring professional came down and tested the air, and found nothing in the air, the owner may not have had to do any abatement. I can't conceive of that happening. But it's conceivable.

Senator Lieberman. OK. We will welcome other questions in writing. We will submit them to you. We're going to keep the record of the hearing open for 3 weeks and ask for your cooperation in responding.

For now, I thank you for your testimony, which helps us to do better the next time around.

The committee will stand in recess for 10 minutes, and then we'll come back to the fourth panel.

[Recess.]

Senator Clinton [assuming the chair]. We're going to reconvene the hearing. We have a very important panel with a lot of viewpoints and concerns that we haven't heard from yet. I want to thank all of the witnesses for coming. I want to reiterate my request that if you have specific questions, concerns, statements, that you would like to submit from the audience, from a group you represent, on behalf of yourself, please, we'll leave the record of this hearing open for 3 weeks. I believe we've given information about how people can get that to us.

If you submit questions, you may e-mail them to the committee clerk at Duane--Nystrom@epw.senate.gov.
The record of this hearing will be published and available to the public at http://www.senate.gov, at the link to the Committee on the Environment and Public Works. We will keep it open, the hearing record, until February 25, 2002.

I am delighted to see a lot of my friends and colleagues here on this panel who have a very specific perspective that I want to be sure to be in the record and to be publicly recognized. Because it's such a large panel, we're going to try to keep everybody to the time limit of 3 minutes, give or take a little bit of time, so that everybody will have a chance to be heard.

Our first witness will be Mr. Tom Scotto, president of the Detectives Endowment Association.

Mr. Scotto.

STATEMENT OF THOMAS J. SCOTTO, PRESIDENT, DETECTIVES ENDOWMENT ASSOCIATION, INC., NEW YORK CITY POLICE DEPARTMENT

Mr. Scotto. Thank you, Senator.

Based upon some of the remarks I've seen here this morning, and in the press conference, I think it would be wise for this committee to just focus on doing what is beneficial for everyone, and not look at the finger pointing and accusations. As a result of what happened on September 11th, I witnessed people from all over this country coming together and putting

their best foot forward to make things work. Whether there were some shortcomings or not that eventually developed from their efforts, I'm sure they were all well intended.

Having said that, on behalf of myself and the members of the New York City Police Department, I wish to express our appreciation to this committee for affording us the opportunity to express our concerns regarding the aftermath of the tragic events of September 11th. Since that date, members of the New York City Police Department have worked around the clock at the World Trade Center and the Staten Island Landfill.

As such, they have been exposed to a number of identifiable toxic substances and perhaps hundreds of other combinations of these toxins that may never be identified, and the long-term health effects of which are still unknown.

The major concerns of police officers can be grouped into four categories. No. 1, the development of a uniform procedure to provide physical exams over an extended period of time to monitor the overall effects of their exposure to the elements at Ground Zero and Staten Island Landfill. No. 2, assuring essential and required medical treatment within the basic health coverage provided by the city.

No. 3, in recognition of the fact that many of the illnesses which result from contact with toxic substances can take in excess of 10 years to appear, we should revise the current pension provisions to protect the families of those who retire and then may suffer a disability and/or terminal illness as a result of their exposure to Ground Zero and the Staten Island Landfill environment. No. 4, revise the current legal requirements which impose an unrealistic time limit on one's ability to commence an action against the city.

Those are highlighted as pinpoints, and if I may just take the liberty just to explain them a little briefly, not from my written statement, but right from the heart. I was so pleased to hear Dr. Kelly testify before that the fire department has implemented a procedure from day one to monitor the results of physical exams over an extended period of time. Unfortunately, I'm also saddened to inform this committee that no such procedure exists in the New York City Police Department.

First, so disturbed were we, meaning, when I say we, the five police presidents, that we called a meeting last week and out of our own money, the union dues, we put up $85,000 as seed money to implement the program to start a similar procedure within the New York City Police Department, which does not exist today. So I would hope perhaps as a result of the testimony today, maybe the mayor or someone within the city agencies will look at this and say, we were unaware of the fact that no such procedure existed in the police department, and commence one immediately. It should not be at the cost factor of the members of the union.

Second, when I said assuring essential required medical treatment within the basic health coverage provided by the city, many of these ailments that occur as a result of being exposed to toxics require special and specific type of treatment and exams. Most of this type of treatment and exams are not covered by the basic health packages provided by the city of New York. Therefore, I think it's essential that we take a very close look at that, and say if there is any

illnesses that are directly related to their exposures that this type of coverage should be provided by either the State or the Federal Government.

Third, in recognition of the fact that many of these illnesses result from, you know, 10 years from now, many of the members of the police department are retiring this year for a number of reasons, a large amount are. Therefore, the way the current pension rules are designed, if you do not have that ailment on the day of your retirement, and subsequently, you develop an illness, well, you cannot come back to the pension system and get a modification to the payment.

I think there's going to be a desperate need for police, fire and other city employees to have some sort of legislation designed that would protect their families in the event that they develop a disability and/or a fatal death, perhaps, even, as an exposure, so that their families can be protected.

Fourth, under the current laws, you have up to 90 days in which to file a suit against the city, or 90 days from the time the ailment surfaces. If you fail to do so, then your timeframe to take such an action against the city of New York is now over with. So I think that again, although we're talking about air quality here, these are some of the hybrids that come off of this issue that we're talking about that I think are major concerns to the members of the police department, and I'm sure to the fire department and other city employees.

So to try and stay within the timeframe allotted me, I'll just say thank you to the committee and hope that we have the opportunity to address these issues.

Senator Clinton. Thank you so much, Mr. Scotto. I think that your ideas are very good ones, and we'll certainly be sure that both the city and the State representatives get those specific recommendations.

Our next witness is Mr. Edward Malloy, the president of the Building and Construction Trades Council of Greater New York. Thank you for joining us, Mr. Malloy.

STATEMENT OF EDWARD J. MALLOY, PRESIDENT, BUILDING AND CONSTRUCTION TRADES COUNCIL OF GREATER NEW YORK

Mr. Malloy. Thank you, Senator Clinton.

On the morning of September 11, 2001, nearly every unionized construction project in New York City shut down as workers rushed to Ground Zero. In the early days of this tragedy, it is estimated that more than 10,000 of our members volunteered their skills on the site. In the ensuing weeks and months since, when the city of New York's Department of Design and Construction assigned recovery and cleanup responsibilities to a team of the area's most respected contractors, approximately 2,000 of our members per day were employed in two around-the-clock shifts of 12 hours. Today, as this recovery and cleanup effort moves toward conclusion, several hundred of our members remain on the job.

In testifying before the subcommittee this morning, we would like to draw your attention to two areas of interest and concern. The first is the area of measurable safety and health data and the partnership between labor, management, and government which has produced rather impressive results in this

regard. The second is the less certain issue of how we address safety and health exposures which are not as easily detectable as common bumps and bruises.

On November 20, 2001, the Building and Construction Trades Council, the Employers Association, OSHA, and other public and private entities working at Ground Zero implemented a safety and health partnership agreement on the site. A copy of this agreement is attached to our testimony for your consideration. Let me share with you what we consider an exceptional report. The results of this partnership and other cooperative efforts are encouraging. With more than 2 million hours of labor completed, there have been 96 claims for workers's compensation reported. Of these claims, 13 have resulted in lost time due to injury or illness. No deaths or life-threatening injuries have occurred. All experts with whom we have consulted advise that the number of injuries and illnesses, as well as their relative severity, are well below what might have been expected.

It is our intention as an industry, with both a continuation and expansion of the commitment to safety and health, that this record be maintained and improved.

The second matter of concern pertains to the need for clinical medical services to be made available to every individual, whether they resided, volunteered, or were employed at Ground Zero or in the nearby vicinity, particularly in the earliest days of this tragedy when it would seem that the potential for exposures to contaminants was at its highest. We appreciate Senator Clinton's efforts to secure $12 million for this purpose and submit to the subcommittee that additional funding must be provided to assure that every individual whose health has potentially been adversely affected by activities at or near Ground Zero be available to receive clinical medical services.

Madam Chairperson, members of the subcommittee, the losses and devastation caused by the events of September 11th are well-known. It is imperative that every effort be made to assure that no further unnecessary and preventable tragedies result, whether 10 days or 10 years from now. The provision of funding to make clinical medical services available to all individuals who need them is among the most important work that we believe the Federal Government can undertake going forward. We do not hesitate to argue that it is a particular moral obligation to assure that those men and women who responded so selflessly and even heroically to the events of September 11th receive every possible consideration for their well-being that can be offered.

We will be pleased to cooperate with you in every way to achieve this goal. Thank you.

Senator Clinton. Thank you very much, Mr. Malloy. I think that the members you represent from all the building and construction trades really deserve our thanks and gratitude, not only for what they did in the immediate aftermath, but the extraordinary way that the cleanup has proceeded, ahead of time, below budget, and I hope you'll convey that on behalf of all of us.

Our next witness is Dr. Stephen Levin, medical director, Mount Sinai, the Irving J. Selikoff Occupational Health Clinical Center. We look forward to your testimony, Doctor.

STATEMENT OF STEPHEN M. LEVIN, M.D., MEDICAL DIRECTOR, IRVING J. SELIKOFF OCCUPATIONAL HEALTH CLINICAL CENTER, MOUNT SINAI MEDICAL CENTER

Dr. Levin. Thank you. Senator Clinton, I'm happy to be here today to talk about the health impacts of the attack on the World Trade Center, our understanding of the short-term and longer-range risks to health and a perspective on what needs to be put into place to meet the needs of the thousands of workers and volunteers who played a role in the response to that disaster.

Our center is funded by the New York State Department of Health, and it's part of a statewide network of occupational medicine clinics that was established by the State legislature to examine and treat workers who have developed illness or injury caused by their exposures at work. We have an explicit mission, and that is to find ways to prevent occupational illness by reducing exposures or by detecting and treating such diseases as quickly as possible once exposure has occurred. That, I think, applies to the circumstances we're dealing with today.

Since September 11th, we have examined more than 250 men and women who worked or volunteered at or near Ground Zero. Most of these individuals came to us because they had respiratory symptoms that developed after their exposures there. This very weekend, Saturday and Sunday, we saw over 100 iron workers who had responded during the first few days after the attack, and we learned a great deal this weekend that confirmed our clinical impressions from seeing individual patients over the past several months.

We have long experience in our Center with the health consequences of exposures in the construction environment. As Ed Malloy knows, we've been working with the building trades and employers for a long time. As a result of that experience, we were able, therefore, to predict, unfortunately all too accurately, what health risks were posed by the exposures at and near Ground Zero. That's in exposures to the wide range of airborne irritants present in the smoke and dust caused by the fires and the collapse of the towers, which has been reviewed earlier today by Dr. Thurston and others.

As with most cases of illness caused by environmental agents, the likelihood of developing illness and the severity of that illness depend largely on dose, how much exposure has occurred. What I want to talk about today what we have observed among adults who were exposed at the World Trade Center site. My colleague and department chair, Dr. Phil Landrigan, will talk shortly about the risks to children.

Among the people who fled the buildings, the firefighters, police, and emergency medical techs and the ordinary citizens who tried to help after the planes hit the towers, many were caught in the huge, dense cloud of dust and combustion gases released by the collapse of the buildings. Those people had some of the worst exposures that occurred. They inhaled high concentrations of smoke and dust. Following that grouping, which had the worst of exposures, are those who came to the Ground Zero in the days immediately area after the collapse,

the first days and weeks after September 11th, who performed rescue and recovery work or to were involved in restoration of essential services there. They also had heavy exposures. They were selfless and heroic, often, in what did what they could in the effort to save lives.

The thousands of construction and support workers who have been involved in the removal of debris from the site, as recovery efforts have been ongoing, often working 12 hour days, sometimes 6 and 7 days a week, also have had all too frequent exposures to the dusts and gases which until recent weeks were a constant feature of the site. We were concerned early on, and I mean within 24 hours, that these exposures would cause respiratory tract difficulties, and that is, in fact, what we have seen clinically. Problems range from persistent sinusitis, laryngitis, bronchitis, and among some, the first attacks of asthma they have ever experienced in their lives.

These problems have been especially severe, as has been pointed out earlier today, among those who had respiratory problems before September 11th. Many have noticed a marked worsening of their pre-existing sinus problems or breathing difficulties.

But what is perhaps most striking is the occurrence of respiratory problems, chest tightness, cough, shortness of breath, wheezing, among individuals who were in excellent physical condition before the attack on the World Trade Center. Firefighters are an example, ironworkers and other constructions are similar examples. The experience of our patients parallels that of the firefighters who have been evaluated by Dr. Kelly and Dr. Prezant, that we've heard about already today. High rates of respiratory illness have been found among those firefighters, and it's our impression, especially after this weekend's experience, that we're going to see comparable rates of respiratory difficulties among construction workers and others who were at or close to Ground Zero, especially early on after September 11th.

Some of our patients, once they are away from Lower Manhattan, have noticed a general improvement in their symptoms, but find that exposure to cigarette smoke, to vehicle exhaust, to cleaning solutions, to perfumes or other airborne irritants that their symptoms are being provoked. They're having reoccurrence of their symptoms, in these other settings where irritants are present. None of them had such experience prior to September 11th.

Now, not all who were part of the effort at or near Ground Zero developed these persistent respiratory problems. Some are more susceptible than others. The trouble is that we can't predict who the susceptibles are. It's something we recognize after the fact. It's very important for all individuals who have been affected this way that you prevent further exposure to irritants. But treatment with appropriate medications has to be instituted as quickly as possible, to prevent these conditions from becoming lifelong, disabling illnesses.

I want to make one comment, there's been a tendency to ascribe to short-term problems the irritant reactions. To think of long-term health consequences as only those who have to do with asbestos and potential 20-year later cancer incidents. Well, I can tell you that there will be individuals, especially

if they're not treated adequately, who will have developed asthma as a consequence of these exposures which we are here, until now calling them short-term reactions, who will have asthma for the rest of their lives, especially if they are not treated early. That's the importance of the kind of surveillance program that's been discussed here.

In the past couple of months, and I think what I'm going to say relates more to the issues of concern expressed so far today. We have seen similar respiratory problems emerging among some of the office workers who have returned to buildings situated in the immediate periphery of Ground Zero, especially those located downwind from the debris pile and the fires that were actively burning until December. For most, these symptoms of eye, nose, throat, and chest irritation are transient and they're not of serious concern. That's for most people.

We have patients with new onset asthma since they returned to work in nearby buildings, people who were never previously asthmatic who now have this condition. They were not at Ground Zero. They were four and five blocks downwind of Ground Zero, but experienced some of the same problems. Most of our patients note that now that the fires are out, their symptoms are improving. That's an encouraging fact. There are some who remain very provokable as time goes on.

I want to talk about one other clinical feature that surprised us in its frequency and intensity, even though we predicted that we would have some of these problems, and that's the psychological distress that occurred especially among the early responders. Many of our patients came to us for respiratory problems, but a brief questioning also elicited reports of persistent flashbacks of images and sounds of human trauma and horror they had witnessed, especially early on. Police officers, construction workers, and others have had sleep difficulties, depression or irritability, and many had difficulty controlling their tears when they described this or whenever they were reminded of what this, and in New York City, there are constant reminders of this.

The group debriefing sessions that many participated in were simply insufficient to help some of these individuals resolve these difficulties and the effects of their experience on their emotional well-being and the need for a well developed program to treat such individuals, I think, is clear. Among these tough ironworkers that we saw this weekend, I'd say one out of three were still experiencing significant impairments to their psychological well-being. It was really quite striking and surprising.

I want to address the issue of asbestos exposure at and near Ground Zero, because it been such a constant feature of discussion. We know that asbestos is in the debris pile, there's no mistaking that, and we know that it's in settled dust inside and on the outside of buildings. We know that that's so. Fortunately, the data indicate that asbestos concentrations in the outside air suggests that there really will not be much of a problem as a consequence of walking down the street near it. That's comforting.

For those who work at Ground Zero itself, respiratory protection is the key. The kind of respiratory protection that's been suggested early on from within 48 hours of the time

of the attack, this is the appropriate thing. The problem is that compliance out there on the site can hardly be described as universal. That remains something of an issue.

There is a group at special group risk for asbestos-related disease that hasn't been talked about today: the workers who are involved in the in cleanup of the buildings, the offices and residential spaces near the site. For an individual household resident or office occupant who cleans his or her own space, surely it should be done correctly, but even if it's done incorrectly, the likelihood of significant risk for asbestos-related disease is low. We know that from looking at occupational groups, the construction workers that have been working a lifetime with this material. The risks are very low for an individual apartment owner who does it, even wrong. Although by no means should that be encouraged, and surely we can prevent those exposures.

Those individuals who are involved in doing the cleanup work day in and day out, perhaps for months, are at genuinely significant risk. These are unprotected workers. Many of them have been hired off the street, they're not unionized workers, they're often not English speaking, and they are among the most vulnerable of workers, that they should have been permitted to be exposed to asbestos dust in this fashion is a public health failure. Unfortunately, the information we have is that it's ongoing.

Now, let me finish by saying that from our perspective, from our own clinical experience, the experience of the firefighters that have been so well studied, the information points clearly to the need for developing medical surveillance programs for everyone who placed himself or herself at risk in the course of their efforts, whether as employed workers or volunteers. A registry has to be established. It's quite clear, everyone agrees that that's so.

Medical examinations to identify persistent respiratory, musculoskeletal, and psychological conditions should be made available to all who were there. Treatment should be initiated where findings warrant it. There's been a lot of talk about the need for ongoing research and surveillance for research purposes. We know of workers who now 5 months after the episode have still not been adequately evaluated and are still not receiving adequate treatment. We learned that from the ironworkers that we saw this weekend, 5 months after their exposure. It's key that they be identified and treated as rapidly as possible. Because the longer you delay treatment, the less effective treatment is, and the more likely you're going to wind up with long-term consequences.

If resources are made available, a consortium of medical institutions under the guidance of occupational and environmental medicine expertise can be established, working in coordination with the appropriate Government agencies, to provide these evaluations and treatment programs. I am confident that we would receive full cooperation from relevant employers and labor organizations to facilitate the development of the registry and the clinical surveillance program itself. As others have said before, the many workers and volunteers who have given so much of themselves deserve no less. Surely, the sort of program that the firefighters have been able to

establish is the sort of thing that's appropriate for many others.

So I thank you, and I will be pleased to answer questions.

Senator Clinton. Thank you very, very much, Doctor. I think that your insight and expertise is something we're going to be relying on as we move forward. Perhaps after the hearing, you and Mr. Scotto can talk about ideas you might have. Because I'm concerned by what he's reported with respect to the police officers. We look to you to give us some guidance.

Our next witness is Ms. Christodoulou, who is the president of the Stuyvesant High School Parents' Association, and we welcome you here.

STATEMENT OF MARILENA CHRISTODOULOU, PRESIDENT, STUYVESANT HIGH SCHOOL PARENTS' ASSOCIATION

Ms. Christodoulou. Thank you. On behalf of the 6,000 parents at Stuyvesant High School, thank you for holding this hearing on a matter of great concern to our community.

Stuyvesant is located four blocks from the World Trade Center. The 3,000 students and 200 staff members were evacuated in the middle of a cloud of toxic dust and debris as the second tower was collapsing. The Board of Education reopened the school on October 9. Unfortunately, environmental conditions in and around the school continue to pose a potential threat to our children.

I am not a scientist, I am not a doctor. I am a parent, and the president of the Parents' Association. Having listened to respected experts for the last 5 months, our conclusion is that the environmental safety of Lower Manhattan is still very much in debate. While this debate is going on, our children are getting sick. Our experience since returning to school has been and continues to be problematic. As the inside of the school tested positive for asbestos, the Board of Education conducted an asbestos abatement prior to reoccupancy, and agreed to undertake environmental sampling inside and outside the school. The excavation operations at Ground Zero continue to release a variety of contaminants into the air. Several hundred trucks a day carry the pulverized debris and steel beams coated with asbestos from Ground Zero to a barge which is located right next to our school. It's less than 100 feet north of our school. This is the main debris removal from Ground Zero.

In addition to whatever the composition of the debris is, which is dumped right next to our school and in the middle of the community, diesel emissions from the many trucks and cranes at the barge are a source of additional contaminants. That makes it extremely important to take preventive measures to prevent these contaminants from entering the school. Unfortunately, this has not happened. Results from environmental sampling conducted by the Board of Education demonstrates that on more than 50 percent of the days, from October 9 when our children returned to school to February 1, measurements of respirable particulate mater, the PM2.5, inside the school have exceeded EPA guidelines for children. These particulates may pose a greater danger because they contain a mixture of toxins. Levels of lead dust in excess of regulatory limits were found inside

Stuyvesant on several occasions as recently as last Thursday.

To date, the Board of Education has failed to take adequate measures to protect our children. It still has not cleaned the ductwork of the ventilation system. After months of stalling, it upgraded the filters of the ventilation system at the end of January, after our children had been in the school since October 9. You may hear from the speakers who follow me that conditions at Stuyvesant have stabilized. There is no evidence to support this conclusion, because the environmental quality outside the school is unpredictable.

Also, in accordance with two independent environmental engineers, working with the Parents' Association, the upgrades to the ventilation system that the Board of Education has conducted are inadequate.

The barge operation is a main source of contaminants. The PA's environmental engineer has measured and compared airborne concentrations of particulate matter at or near Ground Zero and at the north side of Stuyvesant by the barge, and has consistently found particulate matter to be higher at Stuyvesant than at Ground Zero. On several occasions, the EPA notified us that it had monitored high levels of certain contaminants, which I'm going to attempt to pronounce----

Senator Clinton. You can just add that to the record.

Ms. Christodoulou. OK, fine. At its monitoring station between the school and the barge. Carting of the Ground Zero debris material to the barge constitutes an unacceptable risk to our children and to the surrounding community along the truck route. Within two blocks from the barge operation, there are 4,500 school children, some as young as 4 years old. Of course, it's in the middle of a residential community.

We are in the unique position to observe this operation, and we can report to you that despite assurances from Government officials, the trucks are not always adequately covered. On cold days, the debris cannot be hosed down to prevent the release of dust. The levels of visible dust in the air and on the pavement are high. Diesel emissions from the trucks and the cranes are high.

This morning, you heard Mr. Johnson of the Department of Environmental Conservation testify that they are looking to install particulate traps and low sulfur fuel for the trucks. I have met with Mr. Johnson and with Ms. Wills, the chairwoman of Community Board One at the barge in early December, 2 months ago. We were talking about the same measures 2 months ago. I'm very disturbed that we're still talking about it. We need action. If the reason that action is not provided is a lack of funding, some agency, FEMA, whoever it is, should step in and provide this funding. We cannot just talk about things and not have action.

To date, Government agencies have been unwilling to either relocate the barge to a less damaging site or to take effective measures to protect the community. Since the return to school on October 9, a number of students and faculty have reported and exhibited clinically diagnosable symptoms of illness. Many parents report that their children have experienced unusual rashes, nosebleeds, coughing attacks, and chronic sinus and respiratory problems. Parents have reported to us several emergency room visits.

Despite what you may hear from the speakers that follow me, no epidemiological study of the students has been conducted. I can say this with full confidence, because parents have not been asked for their written consent, which is required in order to conduct a study on minors. Also, there has been no study or interviews of parents or students. The incidence of student illness cannot be adequately characterized based only on attendance rates and visits to the school nurse's office.

In conclusion, these developments call into question any unequivocal assurances from Government agencies, including the EPA and the Board of Education, about the health and safety of our children.

Regarding what courses of action should be implemented to protect environmental quality and public health, I have a whole list. They're in the record. I want to focus on two. First, the truck and barge operation right next to the school should be relocated to an area where there is less residential and educational impact. The Government should assume responsibility for implementing a centralized and coordinated effort to monitor and track incidence of illness. A central registry of all residents, workers, and students who have been exposed to contaminants as a result of the September 11th attacks should be established.

The student population at Stuyvesant is very diverse. Many of our students come from first and second generation non-English speaking immigrant families. We are concerned that many of these families do not have the wherewithal to seek early medical care. Dr. Stephen Levin has advised us that early detection and treatment of respiratory illness is critical in terms of preventing such illness from becoming chronic. I would like to take this opportunity to thank Dr. Levin for his help during this period.

The Government should assume responsibility, therefore, for early detection and medical treatment of illness related to the World Trade Center disaster. I will also go a step further. In my opinion, a dedicated fund should be established to pay for medical costs associated with any future health problems of registered individuals.

Thank you for the opportunity to address you.

Senator Clinton. Thank you very much.

I think we've got some Stuyvesant family members here, which I'm very glad to have. I think your points are very well made. Residents, too. I know. Well, we've heard a lot from the residents. I thought we'd give a plug to Stuyvesant. We're glad to have all of you here.

Our next witness speaks from a different but related perspective, as a second grade teacher at PS 89. Everything that we've just heard about concerns affecting the high school students and teachers at Stuyvesant is certainly very much in the minds of all of us when it comes to the elementary school students. So I'm very pleased that Julie Hiraga would be here to speak on behalf of the students and teachers at PS 89.

STATEMENT OF JULIE HIRAGA, TEACHER, PS 89, MANHATTAN; ACCOMPANIED BY: RANDI WEINGARTEN, PRESIDENT, UNITED FEDERATION OF TEACHERS

Ms. Hiraga. Thank you. Good afternoon, Senator Clinton and members of the committee. I am pleased to be here with Randi Weingarten, president of the United Federation of Teachers. Thank you for this opportunity to testify on the health issues that concern those of us who live and work in Lower Manhattan.

The brutal attack on the World Trade Center on September 11th was a trauma we are all still learning to overcome, but slowly we are trying to return to our normal routine, and that's what the teachers at PS 89 want. We are scheduled to go back to our home school on February 28th, and although there's a lot of excitement and optimism, there's also some anxiety about safety. Teachers are concerned about having to keep windows closed and not having an outdoor play space for the children.

Also, the school is on the truck route for debris removal. These huge trucks emit diesel fumes and their cargo throws a lot of dust in the air. Teachers are worried about the long-term impact on their health and that of our students, and we wonder if symptoms may not emerge for some time.

At PS 89, parents' environmental concerns have affected enrollment. Some families have moved. Others have withdrawn their children, and now we have only half as many students as before September 11th. Sadly, we hear that parents of up to 30 more students intend to enroll them elsewhere, rather than return to our home school at Ground Zero.

As for teachers, having our union as a watchdog has helped allay some of those fears. For example, the UFT's two industrial hygienists and its consulting physician made presentations to our staff and answered all of our questions. They and other union representatives explained what was being done to control the dust, such as watering down the trucks, and installing mats under all exterior school doors to hinder dust seepage. They helped our school get a more efficient filtration system and a HEPA vacuum for our custodial staff. They even sent us snacks and paper towels, which was a real morale boost when we needed it.

We've seen what happened as other schools reopened. Stuyvesant High School was the first on October 9. After some of its staff and students complained of respiratory problems, the UFT asked the Federal Government to step in. As a result, on January 29, the National Institute for Occupational Safety and Health began surveying Stuyvesant staff to compare their symptoms with those at a high school away from the affected area. We saw that the union's experts were not content with acceptable facts and figures alone. They conducted onsite visual inspections to make sure that all the affected schools were properly cleaned and prepared for reoccupancy. When they spotted potential hazards, they forced the city to delay the move until it cleaned them spotless.

So to sum up, we have lingering concerns about our students' psychological and educational welfare, as well as parental reactions. All of us at PS 89 have had concerns about air quality and other health hazards since September 11th. However, the independent monitoring and involvement of the UFT's health and safety experts has helped to reassure us.

Thank you.

Senator Clinton. Thank you very much.

We'll now hear from Mr. Bernard Orlan, the director of Environmental Health and Safety, New York City Board of Education. Mr. Orlan, obviously the concerns that were expressed about Stuyvesant and about PS 89 and about all of the schools in the affected area are ones that I hope you will address in your testimony.

STATEMENT OF BERNARD ORLAN, DIRECTOR OF ENVIRONMENTAL HEALTH AND SAFETY, NEW YORK CITY BOARD OF EDUCATION

Mr. Orlan. Good afternoon, Senator Clinton. I am happy to appear here today on behalf of Chancellor Harold O. Levy and the New York City Board of Education. We appreciate the opportunity to speak about how the events of September 11th have affected public schools in the area of the World Trade Center.

I am Bernard Orlan and I am the director of Environmental Health and Safety for the New York City Board of Education. As you are aware, as of September 11th, we were forced to evacuate a number of schools in the downtown area. While it has been noted numerous times, it is worth pointing out once again that this evacuation was accomplished without a single injury, either to a teacher or to a child. Teachers and other staff kept their charges safe. Indeed throughout the entire system, teachers, principals, assistant principals and support staff worked tirelessly to get children home safely and in the aftermath of that day have helped our students get back to the business of learning.

In the days following the disaster, many of our school buildings were used by various emergency agencies including FEMA, the city's Office of Emergency Management for rescue and ultimately, recovery operations. Other school facilities were used by the Red Cross as emergency shelters. Once permission was granted by the city to normalize activity from the 14th Street area to the Canal Street area and areas east of Broadway, schools in this area were tested for various contaminants, for particulate dust, for carbon monoxide, for asbestos and a host of others. We compared it to the air quality and established baseline levels that exist. Unfortunately, there are not very many guidelines out there that pertain to children of school age. Asbestos happens to be one, and dust particulate happens to be another. That's why I wholeheartedly agree with the other speakers that have discussed the registry and the need to take advantage of this situation. Hopefully, we'll never have to utilize this experience. But since we have survived at this particular point, it's incumbent upon us to use this as a laboratory, so that we know that our children have been safeguarded in the future against anything they may have been exposed to.

The results of these tests and other tests that were taken in conjunction with various health agencies verified that the buildings were safe for children and staff to return. This left us south of Canal Street and west of Broadway seven schools that were contained in six separate buildings that could not immediately be reoccupied. They included two high schools south of the Trade Center area, they included one high school north of the Trade Center area, Stuyvesant High School, an

intermediate school and two primary schools.

Four of these schools were actually being used at the time by emergency workers, by Port Authority of New York and New Jersey, by FEMA, by various other and agencies as staging areas for the various rescue and recovery operations that were taking place. Once these buildings were turned back to the jurisdiction of the Board of Education, we began exhaustive environmental testing, both inside and outside the buildings. First, of course, would have been to test for asbestos. We used the most sensitive testing available. We went directly to the Transmission Electron Microscopy, because we are a school, we have to follow the most sensitive, exacting, AHERA guidelines. We had to take that step beyond what the EPA would have required normally in a residence. But we had to go to the EPA AHERA guidelines.

In some instances, we did find elevated levels of asbestos, in others, we did not. Nevertheless, a decision was made to clean these buildings from top to bottom by AHERA certified asbestos abatement handlers that are State certified by the State Department of Labor, that are certified by EPA. Even in those situations where we did not encounter asbestos, the mind set of these workers that knew how to operate a HEPA vacuum, that knew how to wet wipe, that handled minute amounts of contamination, were very important to us. So although in hindsight we may not have needed to have these handlers used throughout all the buildings, nevertheless, it was a decision made and it is a decision we still stand by to make sure the buildings were cleaned as best they could be at that time.

As the buildings were turned over to us to be allowed to reoccupy for our occupation, for education and for other activities that took place in the schools, we conducted a battery of tests. These included testing for dioxins and PCBs, asbestos, particulates, various metals, cyanides, various air contaminants. Prior to the reoccupancy, we received acceptable levels of all these contaminants. In addition, we worked together with the United Federation of Teachers environmentalists, the various health agencies that were involved, and the Parents' Association consultant to develop various tests that would give that feeling of comfort as we moved along, as we go further from the actual September 11th event. There were various tests that were conducted, again daily for asbestos. At Stuyvesant High School we sampled, continued to sample 21 times each day for asbestos, both inside and outside the building, around the building, on top of the building, close to the fresh air intakes, near the barge of the building. We'd take close to 100 samples of particulate air on instantaneous measure at these schools.

We continue to do these either on a daily or weekly basis, depending on the necessity of the tests and based on the previous results that have been found. For example, metals and dioxin are done once a week. At this point, there are only two schools that have not been reoccupied, one would be PS 89, that shares a building with IS 89, and the school downtown, the High School for Economics and Finance. When they are ultimately going to return, which should be in a few weeks, they will follow a three-pronged approach that we've had with our other schools. Namely, when they do go in, the environmental

monitoring must continue, that the environmental situation in the building in terms of the heating and ventilation system, must be inspected, enhanced when available, so that we can trap the smaller particles of air that many in the scientific community feel may be hazardous to the occupants of the building.

In addition, we have barrier mats to avoid having people entering the building as being a vehicle for bringing in new contamination. These mats have to be laundered periodically so that they cannot bring anything else into the building from the surrounding areas. In addition, there are medical and metal hygiene staff located at each of our schools to assist and document as necessary in all of our schools. They will be there for the next period of time.

Basically in conclusion, we have done everything we can do to ensure that our students are learning and our teachers can teach and they can do so in a clean and secure environment. We will continue to monitor their environment for those issues that we've documented up to this point, and other concerns that may arise. We will continue to work with members of the school and public health community so that we can as a team approach continue to safeguard the health and safety of the school occupants, the teachers and of course our children. Thank you.

Senator Clinton. Thank you, Mr. Orlan.

Our next witness is--we will have time for questions. Just a minute. We're going to hear from all of our witnesses.

Our next witness is Dr. Phil Landrigan. I want to also ask Judith Berger-Arroyo to join us at the table as well. We're going to add her to this witness table for a very short testimony following Dr. Landrigan.

Dr. Landrigan is the Ethel H. Wise professor and chairman, Department of Community and Preventive Medicine, the Mount Sinai School of Medicine. Certainly, I don't think there is anybody in the Nation who is more expert on the environmental effects of toxins and the exposures that children have than he is. I really appreciate your being here, Dr. Landrigan.

STATEMENT OF PHILIP J. LANDRIGAN, M.D., CHAIR, DEPARTMENT OF COMMUNITY AND PREVENTIVE MEDICINE; PROFESSOR OF PEDIATRICS, DIRECTOR, CENTER FOR CHILDREN'S HEALTH AND THE ENVIRONMENT, MOUNT SINAI SCHOOL OF MEDICINE

Dr. Landrigan. Thank you, Senator Clinton. Thank you very much. I want to commend you and Chairman Lieberman for having convened this hearing, and single you out for the extraordinary leadership that you've given to public health generally and to focusing September 11th on the consequences of the attack.

It was good to see Congressman Nadler here this morning. A number of us have consulted Ground Zero Elected Officials Task Force. That's been a very rewarding activity.

I was thinking as I came in this morning, I'm still having trouble personally on the 11th day of each month. I suspect that I and many of us will for a long time to come. It's good to have you transform that pain into the kind of energy that we're exercising here this morning.

What I'd like to talk about, and I'll keep it very brief, because I appreciate that I'm the next to the last thing

between everyone and lunch, is risk to children and particularly what do we do about assessing, preventing, dealing with the long-term health risk to children. We've heard a great deal today about the exposures, the asbestos, the particulates, the products of combustion, the other exposures that were visited upon New York. We've heard from my colleague, Steve Levin and from George Thurston and others, Dr. Kelly, about what's being done to protect the workers.

Kids are a group at particular risk, of course, when we think about environmental hazards. They live close to the ground, so they breathe more dust than adults. They take in more air per pound of body weight per day than we do, because their respiratory rates are more rapid. They have more future years of life, so they have much more time to develop any disease that may be triggered by exposure. Last, of course, kids are more vulnerable. They're just inherently more vulnerable than adults to toxins.

I put some numbers together. On the morning of September 11th, there were 46,000 children living in Lower Manhattan below 14th Street. About 11,000 of these kids are under the age of 5, and 3 of them lived within \1/2\-mile radius of the tower. You've already heard information on the numbers of children who were at the various schools, which totals about 4,500 children. We also estimate that there were about 1,700 women in Lower Manhattan that morning who were pregnant, various stages during the course of their pregnancy.

Thinking about risk to children, I think it's useful to divide those risks into several categories. You've heard all these this morning, so I'll just touch upon the headlines. First of all, there are the risks that are associated with inhaling ambient, outdoor air. I think the data that Dr. Thurston presented are crystal clear, that levels were higher at the beginning. They've declined since, and for the last several months, particularly since the fires have gone out, things are pretty decent.

You've heard about the schools, and I've consulted pro bono to the Board of Education. It's my impression that by and large, inside the schools, conditions are good, that the Board of Education is making an extraordinarily diligent effort to deal with the problems in the schools. I'm still a bit worried about the playgrounds, because some of those outdoor play spaces are right by the roadway where the trucks go, as Mr. Hiraga just described the trucks. I've been down there, I've seen those trucks go by inadequately covered. I certainly wouldn't want any of my grandchildren to be out there.

Then last, there's a question of homes. It's clear that the degree to which homes have been cleaned has been uneven. Some have been dealt with very well, of course, but others have not been dealt with adequately. Kids who are in those homes, and indeed, people of all ages, are at risk of exposure to particulates, asbestos, products of combustion, and whatever else may have gone into those homes in the days following the attack.

So I salute you for having proposed that there be long-term surveillance of people who have been exposed to the products that were liberated into the air following September 11th. The way I see it now, there are two groups who are reasonably well

covered by ongoing surveillance efforts, and one group who are mostly not covered at all. The workers are pretty well covered, there are obviously gaps. We heard from Mr. Scotto about the inadequate coverage of the police officers, but at least the firefighters, certain of the construction workers, are being well covered. My sense is that with the strong unions in place and people like Steve Levin to keep an eye on things, that if we all work together, we'll do a good job of covering the workers.

We're also doing a reasonable good job of covering people at the other end of life, namely pregnant women and their children. Our group at Sinai with colleagues at Columbia have received supported from the New York Community Trust, and we hope to get additional support from National Institute of Environmental Health Sciences to organize a prospective epidemiologic study of pregnant women and their offspring. In fact, it's already been launched. We've already recruited a couple hundred women against our target of 600. So that is progressing reasonably well.

The group who are pretty much uncovered by any sort of systematic medical effort at the present time are kids. Yes, there have been sporadic efforts, ATSDR I think has looked at a few people, various hospitals have looked at a few here and there. But I agree with what Ms. Christodoulou said, to my knowledge, there's been no organized effort to do systematic surveys of respiratory health problems, mental health problems, other health problems in children. I think this is a serious need that needs to be met. We need to put into place organized programs for examining, registering, caring for and tracking these children.

I think these programs are going to have to be kept in existence for several decades. Because we know about the long-term risks of asbestos, mesothelioma, in particular, that may not become evident for two, three and even four decades in some of these children. We've had some preliminary discussions about the need for such a registry with Dr. Henry Falk, the administrator of ATSDR. He's supportive, money may be an issue. I can say that, he can't.

Thank you again, Senator Clinton, for having convened this hearing.

Senator Clinton. Thank you very much, Doctor.

Our final witness is Judith Berger-Arroyo. She's a public health nurse at the New York City Department of Health. She's a member of Local 436 of DC 37, Lee Saunders, the very excellent competent head of DC 37, is here. That was a union that basically was driven out of its headquarters because of its proximity to Ground Zero. So they've struggled not only with the needs of their members, who are throughout the city in various positions, but also very much trying to figure out how to keep themselves going. I think you're back in, now, Lee, basically? Good.

Well, thank you very much, Ms. Berger-Arroyo. We're looking forward to hearing from you.

STATEMENT OF JUDITH BERGER-ARROYO, PUBLIC HEALTH NURSE, DISTRICT COUNCIL 37

Ms. Berger-Arroyo. Thank you, Senators Lieberman and Clinton, for giving us this opportunity to address your subcommittee.

As you pointed out, my name is Judith Berger-Arroyo. I'm a public health nurse with Local 436. But in addition to being a member of Local 436, I am the member at large representative for Manhattan, which means I represent all the public health nurses that work in the borough of Manhattan. I am testifying not only on their behalf, but on behalf of the other 125,000 members of District Council 37.

We are the everyday heroes who helped in hundreds of ways at Ground Zero and elsewhere to keep the city working during the terrible tragedy that occurred on September 11, 2001. I am here today to request that the Federal Government provide funding for appropriate medical testing, treatment and surveillance, as well as continued safety training for us city workers who selflessly and violently put themselves in harm's way following the September 11th attack to assist the citizens of this great city.

From the moment the first plane hit, we have worked, our members who work as paramedics and emergency medical technicians rushed to the scene to begin the rescue effort. Moments after the attack, DC 37 lost three members, two EMTs, Carlos Little and Ricardo Quinn from Local 2507, and Father Michael Judge, a chaplain from Local 299. A score of other members were injured in the aftermath. Hundreds of other DC 37 members played and continue to play important roles in the rescue, recovery and cleanup effort in and around the World Trade Center.

At this point, I want to bring out more of what our members specifically. I myself personally, Local 436 has close to over 800 members in the New York City Public School System. We provide the health care there. I myself was a nurse in one of those public schools in the red zone, if not specifically at Ground Zero. As a member-at-large from Manhattan, I did hear from the public health nurses that we had at PS 89, plus a few other members that we had in the area who worked there.

The cloud, even though it went up Broadway and up to a certain point, the wind, when it would change directions or anything else, would bring it up as far as Chinatown, where many of us worked. We worked for 12-hour shifts for days after that, because we had displaced shelters there. So even though the schools were closed, the shelters were open and the public health nurses manned those shelters in addition to providing services in the school.

So I was exposed, and since December I've had this ``cold'' that I haven't been able to get rid of. The cough comes and goes, and once I think I'm feeling better it comes back.

Myself and my colleagues are most fortunate, because we have health insurance that covers it. We have our own private doctors that we go to. We have DC 37 here to help us, with Dr. Weem from Mount Sinai. But we are concerned about parents and teachers and the students in those schools that don't have insurance or are immigrants and don't speak English and may not think about that. We do outreach on this, we've been hearing from our members.

In addition, our members who were working in the area, not

just at PS 89, and at the other schools, but we have the Bureau of Tuberculosis Nurses that worked in the area, we had epidemiologists, we had nurses that went down to Ground Zero itself the very next day that tested masks and everything else. A lot of them are coming back with either fatigue that they've never had before or they again, like myself, have coughs or this burr in our throats that we can't seem to get rid of. Some of our nurses who have suffered from asthma before, who were very well controlled on medication, now have had to add two or three more medications and are not doing very well at all. These are problems that continue to crop up for all of our public health nurses in the area.

We also have, since I'm speaking on behalf of all the members of District Council, we have our Local 983, our urban park rangers, who were among those who assisted in the evacuation of Battery Park City and the surrounding areas. They were covered with, needless to say since they were evacuating with the cloud. Our Local 1322 and 376 members who work for the Department of Environmental Protection immediately responded by ensuring that the water supply to fight the huge fires was adequate.

Our motor vehicle operators from Local 983 also responded immediately to address critical transportation needs. They are also the ones who helped move all those cars recently with all that dust and stuff to return them to their owners. As I speak, they continue to haul debris from Ground Zero hundreds of times a day. There are truck drivers, Local 375 hazmat workers, also played a critical role, to make certain that chemical hazards were abated quickly. Engineers and architects from Local 375 have been there from day one to provide technical expertise in overseeing the safety of the rescue and recovery operations. Other members of DC 37, such as Local 768, public health sanitariums, Local 420, mortuary care technicians, local 371, social service workers, have all played vital roles by tending to the health and safety needs of those adversely affected by this terrible event.

Until recently, Local 372, school lunch aides, fed thousands of meals a day to the rescue workers at Ground Zero. Since September 11, 2001, DC 37 has spoken out on the need for adequate funding for the city to address the multiple concerns of our residents, as well as our members, who have so vitally assisted in the rescue and recovery efforts. To aid New York City in its recovery, it is critical that the $20 million promised by President Bush be made available promptly to enable the city to meet the crushing and immediate economic needs.

More particularly, an integral portion of the $12 million that you, Senator, and Senator Schumer have proposed to deal with worker health issues must be specifically earmarked for the medical testing, treatment and surveillance of employees who are exposed to the numerous dangers, chemicals and other toxins in and around Ground Zero. To date, only some of the employees working at Ground Zero have received baseline medical examinations. Unfortunately, hundreds of others have not. In order to adequately protect the health of these heroic workers, this money must be appropriated in an expeditious and efficient manner.

We must not allow unnecessary bureaucratic hurdles and lack

of coordination on the part of city, State and Federal agencies to further delay this essential funding. Monies for medical testing treatment and surveillance of workers should be allocated to the New York State Occupational Health Clinic Network, which is well equipped, trained and staffed, but presently lacks adequate funding to deal with the huge number of workers potentially affected by this disaster.

Failure to allocate adequate funding to address these pressing occupational health issues will unduly burden the city's health insurance carriers and delay the needed medical treatment and surveillance that workers need now. Our Government should not place the burden of continued good health on these heroic workers who have already given so much.

I also want to point out, as Dr. Levin and everyone has pointed out, a lot of our members are also suffering from a great deal of psychological stress. We have a great many public health nurses that have been unable to return to their areas of employment in the Manhattan area down there. In fact, we have one public health nurse that, she just can't even look down at the area. We have to try to arrange for a transfer for her, so she will be able to continue doing her job.

DC 37 urges the subcommittee to immediately commit necessary Federal funds to New York City to be used in the following manner. To fund the occupational health clinics in New York City, in order to provide appropriate medical testing, treatment and surveillance. Develop training programs on safety and health-related issues for workers taking part in the rebuilding of the city and to develop a worker registry to identify workers affected by the September 11th attack. That is extremely important, because we need to know. A lot of these chemicals are long-term effect and not short term. We may not see anything for the next 10 or 20 years.

I would like to thank you for your time, and will answer any questions that you might have.

Senator Clinton. Thank you very much.

Well, the time is vanishing, and there are so many questions. I reiterate that anyone with any questions in the audience, please get them to us, we will pass them on, get them answered. But there are several points that I want to touch on before we have to end.

Mr. Orlan, let me turn to you, because there are two specific issues that were raised, and I want your direct response to them. The first, with respect to Stuyvesant, were the ventilation systems and the ductwork cleaned, and who did that work, if it was done?

Mr. Orlan. The air mixing chambers and the ventilation system were cleaned by an asbestos hazard abatement company prior to the reoccupancy of the school. Prior to that weekend, and there was a holiday weekend, to ensure that there was nothing lurking behind the ventilation system, the ventilation system was run, a number of air changes, after which air sampling was conducted throughout the school. The analysis was using the TM analysis, we were able to get down to the smallest level of particulate. Those results were shared prior to reoccupancy of the school with both the environmentalists with the UFT, with the various regulatory agencies and with the parents' association consultant.

Senator Clinton. Ms. Christodoulou, you just heard Mr. Orlan's response. What's your response to that?

Ms. Christodoulou. I think it was not a direct response. Your question, Senator, was were the ducts cleaned. Mr. Orlan responded that the intakes of the ducts were cleaned. It's a----

Senator Clinton. Let me stop you. Were the ducts cleaned, Mr. Orlan?

Mr. Orlan. The ducts themselves were not cleaned.

Senator Clinton. Is there some reason why the ducts couldn't be cleaned?

Mr. Orlan. The ducts, there was a sufficient number of air changes going through the ducts. Whatever was reachable by the ducts, the diffusers, the air chambers, the air handling chambers themselves, were physically cleaned. From that point on, sufficient amount of air was run through the ducts. It was a protocol agreed upon by the parents' association consultant prior to running this. We shared results with that particular gentleman and with the environmentalists with the UFT.

Senator Clinton. Well, now, I think this needs to be resolved. It's not going to be resolved here. But clearly, this is the kind of either misunderstanding or lack of information or just difference of opinion about what needs to be done that I would very much like to see resolved one way or the other. Because I think that going back to what Mr. Scotto said in the very beginning, I don't think anyone has any desire to expose our children to any toxins that can be controlled and eliminated. If there are legitimate differences of opinion, obviously my view is, you err on the side of doing more, not less, and you will do everything that possibly can not only in actuality, but frankly by perception, give the sort of confidence that we need.

So I would hope that you can discuss this further and perhaps on behalf of the parents' association. I would appreciate getting a report as to whether you're going to go forward and do that, or whether some independent expert says it's not necessary. Because I think that that is the real bottom line on the Stuyvesant issue.

But I also wanted to ask Mr. Orlan about PS 89. I know there are teachers and parents in the audience. I guess they're also wondering, can you have some kind of additional meeting with some independent mediator or expert there, so that the questions that they have can be answered? I know that this is something that would be on the minds of any teacher or parent about their children.

Mr. Orlan. So far as the staff and parents of 89, we did meet again last week. Chancellor Levy attended, various representatives of medical establishments that are working with us, independent agencies. Also their own independent consultant that the parents have hired.

I spoke to the president of the parents' association, and I did offer to meet with them on an ongoing basis, even when school does go back into session. If they have a regular PA meeting, if they just need me to come in for 5 minutes once a month to say, before we discuss reading and writing, let me tell you what we've done, what our test results are, what the mayor's office tells us is happening with the site and with the

barge. I will be more than happy to do that. I've made that clear to them.

Senator Clinton. Dr. Landrigan, as I've heard your testimony, you said that having consulted pro bono to the board, and I know you've also met with parents groups and teachers groups and others, you are willing to say that you think that the interior of the schools are acceptable, but you're worried about the playgrounds and the idling of the diesel trucks and the movement back and forth to the barge. Is that a fair paraphrase?

Dr. Landrigan. Yes, Senator, it is. My colleague, Joel Foreman, who's a pediatrician with me at Mount Sinai, and he directs an ATSDR supported pediatric environmental health specialty unit, was actually at the meeting that Mr. Orlan mentioned that was convened last week with the parents of PS 89. We're continuing to review the data. It's a work in progress, and we understand that an examination of the data at one point doesn't answer the questions for all time. But we're committed to continuing to work with the parents and with the board of education.

Senator Clinton. I will take very seriously your recommendation about the registry for children. It's something that we need to move on quickly.

Let me also just thank Dr. Levin for bringing to our attention the un-unionized, unprotected, undocumented workers who have been put into very difficult positions with these cleanups. I think we have to try to have an outreach also to try to deal with some of their potential health problems.

Now, I have to wrap this up. In fact, ending on the note that several of you have mentioned, we need financial help to do the kind of registry, the monitoring, the tracking and surveillance, for all of these groups, and to provide the additional expertise. I know how difficult it is, because certainly those of us who have lived through what happened here and what happened in the following weeks with anthrax know that we don't have all the answers we wish we did have. The Hart Building in Washington, DC where Senator Schumer has his office was closed for months. Nobody knew how to clean it up. They had to go back and try twice with an untried system to pump gas into the building.

So this is an issue, when it comes to our response to the health impact of these environmental disasters that flow from terrorism that we've got to do a better job in addressing. I'm on my way, actually, to go over to the city council, because I am concerned that we're not going to be having the support we need financially from the Federal Government to do the work that I think all of us agree needs to be done. It's something that to me just absolutely has to be a national priority.

I don't think that the war on terrorism can only be fought either in Afghanistan or foreign countries or that our only response here at home is to beef up security. We also have to take whatever steps are necessary to protect the environment and our health. I think this hearing today illustrates that dramatically.

Now, I thank all of you for participating. I want again to let the audience know that there are instructions on the table as you enter the auditorium for submitting questions and

statements to the committee. Please do so by February 25, 2002. Let me thank you all for being here. I look forward to continuing to work with you on these issues.

The subcommittee is adjourned.

[Whereupon, at 2 p.m., the subcommittee was adjourned, to reconvene at the call of the chair.]

[Additional statements submitted for the record follow:]

Statement of Hon. Jerrold Nadler, U.S. Representative from the State of New York

Thank you, Chairman Lieberman. I would like to thank you and Senator Clinton for holding this field hearing today, and for inviting me to testify, regarding the continuing impact of the September 11th attacks on the air quality in Lower Manhattan.

As the Congressman representing ``Ground Zero'' and the surrounding area, I am deeply concerned about the environmental and health effects posed by the collapse of the World Trade Center for my constituents, and for those who go to school or work in the area. It has now been exactly 5 months since the terrorist attacks and, unfortunately, the people in Lower Manhattan still do not know whether or not it is safe to live and work in the area. The Environmental Protection Agency (EPA) has failed in its mission to ``. . . protect human health and to safeguard the natural environment . . .'' by not exercising its full authority to test and clean all indoor spaces where people live and work. As such, the EPA has created a full-scale crisis of public confidence.

Yet, all is not lost. The EPA can and must act now to remedy this situation and make Lower Manhattan safe and to restore public trust. Despite statements to the contrary, the agency does currently have the authority and resources to do so, and it must do so quickly. However, if the EPA continues to fail New Yorkers, I will introduce legislation to mandate action.

I am going to begin by being very blunt. We now know enough to be alarmed and outraged at the Federal Government's response to the environmental impact of September 11th. First, we know that EPA Administrator Christine Todd Whitman misled the public on September 18, 2001 when she said she was ``glad to reassure the people of New York that . . . their air is safe to breathe, and their water is safe to drink.'' She made that statement without the indoor data necessary to make such a pronouncement. Second, we know that the EPA has made a series of conflicting comments about the presence and quality of hazardous materials, and has even knowingly withheld critical data regarding the causticity of the dust. Third, we know that the EPA delegated authority to New York City to handle indoor environments, but did nothing to ensure that the City's response was appropriate. This left New Yorkers to their own, uninformed devices, often without the means to take care of themselves and their families. This is true even as the EPA had its own building at 290 Broadway professionally tested and cleaned. Finally, we know that the EPA has treated New York differently than it has treated other locales contaminated by hazardous materials. New York was at the center of one of the most calamitous events in American history, and the EPA has essentially walked away.

Ms. Whitman's statement, reassuring the public about the safety of air and water, which has been echoed by many at all levels of government, was based only on the EPA's outdoor tests--the results of which are still in dispute. At that time, there had been no systematic testing of indoor air or dust in residential or commercial buildings by any Government Agency, let alone by the EPA. In fact, the EPA did not

intend to do testing even of outdoor air in residential areas of Lower Manhattan until my Ground Zero Elected Officials Task Force requested that it do so on September 21. Ironically, the very first public testing conducted inside residences, which was commissioned by our Task Force, commenced on the very day Ms. Whitman made her misleading statement. The results were made available to the EPA on October 12. The test results showed elevated levels of hazardous materials in these residences. The EPA did nothing and Ms. Whitman did not adequately clarify her statement.

In recent weeks, the EPA has stated repeatedly that the city of New York, not the EPA is responsible for indoor testing. The city, however, didn't get around to testing inside homes until November and December. The full results of these test are still not available and, according to the Health Department, won't be until the spring. I do not understand why the results of tests undertaken by a public agency are being delayed for public release. Our test results took less than a month to be released. Nevertheless, just 3 days ago, the city Department of Health issued a press release regarding this limited indoor testing. Despite a pacifying headline, many the limited data in the press release has caused the scientists with whom we've consulted to believe that full results would directly contradict Ms. Whitman's statement. The release does make it clear, as did our commissioned study, that there were disconcerting levels of hazardous materials in peoples' apartments.

Ms. Whitman's reassurances are deeply confusing in light of other statements made by agency officials and of other information we now have that the EPA has not itself released. For example, in a copy of a January 25, 2002 speech given by Walter Mugdan, EPA Region II counsel, which I have obtained, I find that he states, ``. . . a significant number of the WTC bulk dust samples that we analyzed did have more than 1 percent asbestos.'' But an October 3, 2001 EPA memo ``Confirm[ing] No Significant Public Health Risk'' states, ``The vast majority of EPA and OSHA samples of air and dust analyzed for asbestos have been at levels that pose no significant risk to residents and workers returning to their homes or area businesses.'' This statement has been made repeatedly by EPA Region II officials. How are New Yorkers to interpret these conflicting remarks? I can't even tell you what they mean--except that they cannot both be true.

Confusing remarks are one thing, withholding critical data pertaining to the public health is another. We know that it took a Freedom of Information Act request by the New York Environmental Law and Justice Project to get test results showing dangerous levels of hazardous materials in outdoor ambient air. The EPA claimed that this was an ``oversight.'' But now we have a new, frightening bombshell.

According to this Sunday's St. Louis Post Dispatch, the U.S. Geological Survey (USGS), using the country's best detection equipment and methods, found pH levels in World Trade Center dust that are ``. . . as corrosive as drain cleaner'' and passed this information along to health experts at the EPA on a ``government-only'' website. That's right. As corrosive as drain cleaner. (By the way, it took less than 2 weeks in September for these test results to be ready.) I submit this article for the record.

Andrew Schneider, the paper's Pulitzer Prize-winning environmental journalist, charges, ``the USGS data was not released by the EPA nor apparently were the environmental agency's own test results on the dust.'' The EPA claims to have released this data to the public, but when Schneider reviewed all of the EPA's statements made since

September 11th, he found nothing that warned of these high pH levels. According to the New York Committee for Occupational Safety and Health (NYCOSH), such dust ``once it's in contact with moist tissue--the throat, the mouth--nasal passages, the eyes and even sweaty skin--it becomes corrosive and can cause severe burns.'' This is utterly scandalous. We must find out why the EPA hid this information from the public and we must see all the data now. I hope that Senators Clinton and Lieberman will join me in calling on the Federal Government to explain why New Yorkers were misled, and to demand the immediate release of the full compliment of data.

The EPA has not only provided false reassurances and misleading information. The EPA has also abrogated its responsibility to act. In a statement issued on January 17 in response to a press conference I held, the EPA states that it, ``has lead [sic] the effort to monitor the outdoor environment while the city of New York has taken the lead regarding the preoccupancy of buildings.'' At least the ERA admits that it has delegated authority to the city. Unfortunately, the EPA has yet to provide any justification for doing so, nor has it provided any evidence of the oversight measures it is compelled to take to ensure that the city is acting in accordance with the strictest federal standards. On January 23, I sent a formal inquiry to Administrator Whitman asking for answers to these and other questions about the city's response, which I submit for the record today. It has been over 3 weeks since the letter was sent and I have yet to get a response.

The EPA might say today, as it has in the past, that it does not have the proper legal authority to take the steps we are requesting to test and clean the areas affected by the collapse of the World Trade Center. It will probably say that the Clean Air Act, for example, does not govern indoor air and that it is therefore the responsibility of the local and State governments, or even that of the landlords and residents themselves. This is, again, all utterly misleading.

Under Section 303 of the Clean Air Act, the EPA has the authority in an emergency situation to protect human health when there is an ``imminent and substantial endangerment'' presented by a source of pollution. The intent of Congress is clear in this regard. A Senate Report from 1970 on Section 303 states, ``The levels of concentration of air pollution agents or combination of agents which substantially endanger health are levels which should never be reached in any community. When the prediction can reasonably be made that such elevated levels could be reached even for a short period of time--that is that they are imminent--an emergency action plan should be implemented.'' In short, the EPA should not wait for people to actually get sick before it acts, and it clearly has the authority to act under this law. Indeed, an EPA memo entitled ``Guidance on the Use of Section 303 of the Clean Air Act'' was issued to the Regional offices on September 15, 1983, outlining these very points. I submit a copy of this memo for the record.

But the Clean Air Act is not the only governing statute. The EPA has the authority to act on indoor air under the National Contingency Plan (NCP) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). In fact, I understand that the EPA has indeed been utilizing some of the NCP protocols at Ground Zero--however, they have not relied on this authority, or any other, to test or remediate indoor environments.

As we speak, the EPA is in fact doing indoor testing and remediation in Herculaneum, MO and other locales without Superfund designation. We must learn why the EPA is treating New York differently

and I ask the Senators present here today to help me find out. This double standard is unconscionable.

The EPA was unwilling to act on its own, and yet did nothing to ensure that those ostensibly charged with acting did ``the right thing.'' The EPA, on its web site and in public press releases referred residents to the New York City Department of Health, which recommended that people clean their potentially asbestos-laden dust with a ``wet rag or wet mop.'' Clearly such cleanup measures are inadequate, as seen by the EPA's own actions taken in its building at 290 Broadway. I again today ask why the EPA applied stricter measures to Federal buildings than the city advised for local residences and business equidistant from the World Trade Center.

Given the lack of action, credible information or oversight, I believe the EPA has failed in its responsibility to protect the public health of the citizens of Lower Manhattan. This is quite simply shameful, for public health is the first thing we, as a government, must protect.

In order to ensure a full and fair public assessment on the EPA's actions following September 11th, I have also asked the EPA National Ombudsman, Robert Martin, to investigate these matters. Mr. Martin has been doing so, and I am disappointed he has not been invited to testify and share the status of his investigation with the committee. However, I understand there is a time constraint today, so I have attached a statement from Mr. Martin to be included in the record. As you may also know, Administrator Whitman is attempting to place the Office of the Ombudsman under the control of the Inspector General, effectively stripping the Ombudsman of his independence and ability to investigate these claims. I sincerely hope that Administrator Whitman will stop her quest to eviscerate the office of the Ombudsman, and in so doing, further undermining the integrity of the agency.

I realize that I have leveled serious charges here today, but I believe I have the moral responsibility to do so. The salient point is that we still do not know the extent of the presence of hazardous materials in some areas of the city. It may or may not be dangerous in many indoor areas of lower Manhattan--we just don't know. I am dismayed that there seems to be unwillingness on the part of our public agencies to get this information. But given that we do not have all of the facts, we cannot conclude anything. I do know that we must get the facts and act swiftly and appropriately to get the job done right.

We must not fall into the catch-22 of saying there is no evidence of a public health emergency without taking any steps to get such evidence. The burden should not be on the landlords and residents themselves when the testing procedures and cleanup measures are expensive and must be conducted by properly trained personnel.

The EPA has the statutory and regulatory authority to test and remediate indoor environments in Lower Manhattan, and has exercised such authority elsewhere. I am calling on the EPA today to immediately commence a program of full-scale testing and remediation using the best available technology, and to make a report of all such test results and actions available to the public. The EPA must also issue the test results in a manner which is tied directly to health standards, so that we can truly assess the public health risk posed to the people of Lower Manhattan. Finally, testing procedures should in no way impede the expeditious remediation of hazardous materials found by other government agencies or private researchers. Similarly, should the EPA find dangerous levels of hazardous materials before the full spectrum of testing is completed, cleanup measures should commence immediately.

If the EPA fails to act again, despite its current authority, compel it I will introduce legislation to do so.

People might say that the measures I am requesting here today are expensive. That may be, but we must protect the public health. Although the cost may be high today, imagine what the cost will be in the future if it turns out that they're really are dangerous levels of hazardous materials in Lower Manhattan. Imagine the City's and EPA's contingent liability to lawsuits 20 years down the road. Envision the potential health care costs.

It is in the best interest of the residents, workers, students and businesses for the Government to act swiftly and appropriately to address the public's environment and health concerns. We cannot afford to wait while all the agencies point fingers at each other. There is still time to right this situation.

Time is of the essence. My office has received numerous complaints from people experiencing adverse health effects such as headaches, nosebleeds, and respiratory ailments. The symptoms are so widespread that they have been dubbed ``The World Trade Center Flu.'' Public confidence is at stake. People know when they are sick, they know when something is not right, and they know when they are being lied to. I sincerely hope that we do not have another ``Love Canal'' on our hands, but the best way to avoid that is to do the necessary testing and cleanup now.

Thank you for inviting me to testify before you today. I look forward to working with my colleagues in both chambers of Congress, and with all interested parties, to ensure that New York City is safe and prosperous for many years to come.

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[From the St. Louis, (MO) Post-Dispatch, February 9, 2002]

Caustic Dust Blankets World Trade Center Area

(By Andrew Schneider)

NEW YORK.--Even as the dust from the collapsed World Trade Center was still settling, top government scientists were determining that the smoky gray mixture was highly corrosive and potentially a serious danger to health.

The U.S. Geological Survey team found that some of the dust was as caustic as liquid drain cleaner and alerted all Government agencies involved in the emergency response. But many of those on the front lines of protecting the health of the public and workers cleaning up the site say they never got the information.

``I'm supposed to be in the loop, and I've never heard any specific numbers on how caustic the dust actually was,'' said Dr. Robin Herbert, co-director of the Mount Sinai Center for Occupational and Environmental Medicine. ``There is a large segment of the population here whose physicians needed to know that information that USGS submitted. Exposure to dust with a high pH could impact everyone, but especially the very young, the very old and those with existing pulmonary disease.'' Census data show large concentrations of young and elderly living near the World Trade Center site.

The EPA's office in New York said it repeatedly told the public that the dust was caustic because of the cement that was pulverized when the towers collapsed. But an examination of all the EPA's public and press statements made since September 11th found nothing that warned of the very high pH levels found by the Geological Survey scientists. Nor did the statements disclose the specific levels that the EPA's own testing found.

``We've not heard of EPA or anyone else releasing information on specific pH levels in the dust, and that's information that we all should have had,'' said Carrie Loewenherz, an industrial hygienist for the New York Committee for Occupational Safety and Health, which provides assistance to more than 250 unions.

``It's the specific numbers--those precise pH levels--that we need to make the appropriate safety decisions for the workers, and they were never released,'' Loewenherz said. ``The dust, once it's in contact with moist tissue, the throat, the mouth, nasal passages, the eyes and even sweaty skin, it becomes corrosive and can cause severe burns.''

Most of the samples taken by USGS' team had a pH of 9.5 to 10.5, about the same alkalinity as ammonia. Two samples that were taken inside a high-rise apartment and in a gymnasium across from the wreckage of the World Trade Center had a pH of 11.8 to 12.1--equivalent to what would be found in liquid drain cleaner.

The degree of acidity or alkalinity in a material is expressed as a pH measurement. Neutral pH--like water--is 7 on a 15-point scale. Lower than 7, to 0, is an indication of acid. Higher than 7, to 14, the top of the scale, is alkaline. Levels near either end of the pH scale can harm the health of people and animals.

Bruce Lippy, Loewenherz's counterpart with the operating engineers union, is responsible for the 300 workers running heavy equipment at Ground Zero.

``Part of the dilemma we faced was not knowing precisely what was in the dust,'' Lippy said. ``We knew it was caustic but had no information on exactly how caustic it was. I was trying to get people to wear the respirators, but if I knew how high the pH levels were, I could have been more persuasive in convincing the workers of the dangers.''

Only a handful of the 100 or so workers sorting wreckage and loading trucks on the site over 3 days last week were seen wearing respirators or protective masks.

scientists rush to manhattan

Like the rest of the world, the USGS team watched the storm of dust roll across Manhattan after the terrorist attack on September 11th. With its world-class laboratories and sensors that can detect minerals on a distant planet, the Denver-based team was already making arrangements to get NASA's infrared sensors and aircraft over Ground Zero as the EPA and the U.S. Public Health Service requested its help.

Responding to requests from the White House science office, the NASA team flew over Manhattan four times between September 16 and September 23, while USGS scientists collected samples of the dust from 35 locations below.

Back in Denver, more than two dozen scientists using the world's most sophisticated analytical equipment ran the samples through extensive testing.

The Geological Survey's test results were posted September 27 on a Web site restricted to Government agencies.

The USGS findings were ``evaluated by our technical experts and found to be consistent with the findings of EPA's Office of Research and Development,'' said Bonnie Bellow, the agency's spokeswoman in New York.

``The USGS data was also discussed by an interagency group of scientists, epidemiologists and health officials,'' Bellow said.

But neither the EPA headquarters nor its New York office would comment on what came out of these discussions or which EPA results they were ``consistent'' with.

The USGS data on pH levels were not released by the EPA, nor apparently were the environmental agency's own test results on the dust.

``It is extremely distressing to learn that the EPA knew how caustic samples of the dust were and didn't publicize the information immediately, or make sure that OSHA publicized it,'' said Joel Shufro, executive director of the New York Committee for Occupational Safety and Health.

``If we had known at the time exactly how caustic the dust could be, we would have been in a better position to make informed decisions about respiratory protection to recommend and about the urgency of ensuring that workers and residents followed those recommendations,'' Shufro said.

``It is inexcusable for EPA to have kept silent for so long about such a potential hazard.''

dust weakens strapping youth

John Healy Jr. is 15, big, taller than his father. He looks as strong as a bull. But when he talks, wheezes and deep coughs punctuate his words. He and his father, John, live in an apartment overlooking what was the World Trade Center.

``Something is tearing him up, hitting his lungs hard,'' said his father. ``He had asthma when he was younger, but he was fine until after September 11th. If I knew the dust was that caustic, there's no way I would have brought him back here.''

John goes to Stuyvesant High School, a 10-story building for the brightest of the bright. It's one block from the collapsed buildings and beside the Hudson River, where barges are being filled with debris destined for sorting at the Fresh Kills landfill.

``I need to go to this school, and I need to live here to do it, but something in that dust is just hurting me,'' the teen said as he looked down at the pile of pills, throat sprays and inhalers in his two large hands.

His father looked out the narrow dining room window at the brightly lighted carnage bellow. A light film of dust coated the window.

``I can't understand why the Government didn't tell us what was actually in the dust,'' Healy said. ``Were they afraid we were going to panic? I needed that information to decide what was best for my son. I needed it.'' The teen's malady and other serious problems are being seen by physicians throughout New York.

``What we're finding is incredible irritation to the lungs, throat and nasal passages,'' said Herbert, from Mount Sinai. ``Some of the tissue is cherry red, vivid, bright, and we've never seen anything like it before.

``There are a large number of clinicians and public health specialists who are struggling to reconcile the health problems they're seeing with the exposure data they're being given,'' Herbert said. ``The high pH in the dust may be a part of the answer. If the Government had these pH readings of 11 and 12, the public and their physicians should have been told.

``Any credible information the Government had relating to health issues just should have been released,'' she said. ``There is no justification for holding it. You don't conceal the information from those who need it.''

a dubious honor

Mark Rushing and Tori Bunch have the debatable honor of having lived in one of the sites that USGS tested. In fact, their apartment on the 30th floor of a building overlooking the World Trade Center tied

for highest pH--12.1--of the dozens of sites where samples were collected.

``It's obvious to those of us living here that the Government--city, State and Federal--wanted things to return to normal as quickly as possible. The economic losses were great,'' Rushing said. ``But no matter how you view it, that's no excuse for the Government, any government, to conceal hazards from the people they are charged with protecting.''

Rushing and Bunch found a new apartment as far from the World Trade Center as they could get and still be in the city. The apartment is on the lowest floor available.

Even within the EPA, professionals believe the agency did a disservice by not acknowledging and releasing the Geological Survey's data.

Cate Jenkins, a senior environmental scientist in the hazardous materials division at the EPA headquarters, said: ``The pH levels the USGS documented were far too high for EPA to ignore. They insisted that all the information regarding health and safety was being released to the public. Well, that's not true. There's nothing, internally or in public releases, that shows the agency ever disclosed specific pH levels.''

Late Thursday, the EPA's Bellow told the Post-Dispatch: ``We have no specific data on pH levels.'' Bellow added, ``This is all the available information on the subject.''

Late Friday, the EPA responded to the question of why it didn't collect its own pH numbers.

``EPA had enough information about the alkalinity of the material from the World Trade Center without doing further analysis,'' Bellow said.

The question of why EPA didn't release the data it had had remains unanswered.

The EPA is in a no-win situation. No Government Agency had been prepared for the enormity of the terrorist attack on New York. Tight budgets--Federal, State and city--ruled out planning and drills for an unfathomable event of this size.

Even most critics say that no amount of preparation could have kept the workers fleeing the twin towers--and the rescue workers racing to save them--from sucking in lungfuls of toxic dust and smoke.

But it's what the EPA and OSHA and the New York State and city health departments did after the dust settled and the smoke cleared that has generated the most criticism.

On Monday, Rep. Jerrold Nadler, the New York Democrat who represents the people in Lower Manhattan, is holding a congressional hearing to determine who dropped the ball. He is expected to announce that legislation will be introduced to ``force EPA to do the proper testing inside offices and apartments and release the finding in a form that would be of value to the public and their physicians.''

Sen. Joseph Lieberman, D-Conn., has scheduled a Senate investigation of the issue.

Less than a week after the attack, on September 16, EPA Administrator Christie Todd Whitman told New Yorkers: ``There's no need for the general public to be concerned.''

That was the same day that USGS and NASA flew their first sampling missions over the city.

The EPA said its boss's comments that there were no dangers from dioxin, benzene, PCB or asbestos--all cancer-causing agents--were based on thousands of outside air samples. Last month, the Post-Dispatch

reported that high levels of asbestos were found in many apartments and offices. The EPA said its regulations did not call for indoor testing.

Hundreds of firefighters, paramedics and police officers are sick, suffering what some physicians call ``ground zero coughs.'' Their problems may have come from unprotected exposure the first week of the attack.

But hundreds of other people--workers, students and residents--who fled the area and stayed out for weeks and then came back also are suffering major respiratory problems.

The few Christmas decorations that adorned light poles in Lower Manhattan have been removed. But the metal poles still bristle with air monitors and vacuum pumps sucking in air almost around the clock, searching for asbestos fibers, chemicals and traces of heavy, toxic metals.

These monitors are of little or no value when it comes to determining the health hazard from dust contaminating apartments and offices. For the most part, the EPA and the Occupational Safety and Health Administration say they're finding little, if anything, for New Yorkers to worry about.

They are talking about contaminants in the air, which is the main pathway for toxic materials to enter the body.

But the EPA pays little or no attention to indoor contamination.

Late Friday, the New York City Health Department issued a brief statement, with very few details, about both indoor and outdoor testing done by the Agency for Toxic Substances and Disease Registry. This well-respected research arm for the Department of Health and Human Services, found pulverized fiberglass in almost half of the samples it examined. However, New York health officials released no specifics on the levels of toxic material found, and no one could be reached for comment.

Attention is being paid to keeping the contamination on the site. Trucks hauling debris from Ground Zero pass through an EPA drive-through shower before they reach the streets. City street sweepers and washers drive a seemingly endless circle up and down the streets of Lower Manhattan.

But even blocks from the collapse, massive windows on offices and cornices on many apartment buildings are still caked with dust.

``We made this analytical effort because we were concerned about the likelihood that the composition of the dust could be potentially harmful to the rescue and cleanup workers at the site and to people living and working in Lower Manhattan,'' said USGS team member Geoffrey Plumlee, a geochemist who determined the pH levels.

``We shared our findings with EPA, FEMA, the Federal emergency response coordinator and everyone else we felt was appropriate. We anticipated that the results would have been shared with the people on the ground, those at risk, but it looks like the information never got to those who needed it.''

Statement of Robert J. Martin, National Ombudsman, Environmental Protection Agency

I am pleased and honored to provide testimony to this subcommittee exactly 5 months after the tragedy which struck this city and the Nation on September 11, 2001. The Hon. Jerrold Nadler of the U.S. House of Representatives and many affected citizens of New York City have asked that I as National Ombudsman and Chief Investigator Hugh Kaufman independently assess what needs to be done to protect the health and

environment of the community.

The initial phase of our investigation identified the fact that asbestos testing being performed and/or paid for by the Environmental Protection Agency was not performed with the best available technology to identify the true health risks posed by the tons of asbestos released into the community from the World Trade Center attack.

As a working finding, I have concluded that the Environmental Protection Agency, or any other agency of Government that has not used the best available technology to measure asbestos levels, cannot irrebuttably conclude that dwellings in the community surrounding the World Trade Center attack are safe. As a working finding I have further concluded that besides asbestos, there are other hazardous materials that pose a risk to the public health and environment from the World Trade Center attack. These include, but are not limited to, benzene, lead, mercury, PBDEs (flame retardants), fiberglass, and PCBs.

Although not a working finding, we have received substantial anecdotal information that the workers and visitors to Ground Zero may not have been provided adequate information, training, and protective gear to assure their health and safety. We have also received substantial anecdotal information that the Environmental Protection Agency has provided erroneous information to the public during their response to the World Trade Center attack.

As in all other major National Ombudsman cases, we will be convening public hearings, taking on the record statements, interviewing witnesses, reviewing records and issuing Interrogatories and Requests for Production of Documents and Working Findings. The Ombudsman process is a transparent process and as in the past we expect that if mistakes have been made, they will be corrected during the process to afford the public the fastest possible help in protecting their health. We anticipate and welcome full cooperation from you, EPA and all other governmental authorities.

We look forward to working with all the elected officials in this area just as I have done in other cases around the country from Florida to Idaho, and from Pennsylvania to Colorado. I particularly want to point to the leadership of Congressman Jerrold Nadler and the Ground Zero Elected Officials Task Force in their efforts an behalf of all the citizens in helping to expeditiously solve these problems.

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Initiation of Administrative and Civil Action Under Section 303 of the Clean Air Act During Air Pollution Emergencies

The purpose of this guideline is to explain the statutory requirements and resource needs which must be met in order to take action under Section 303 of the Clean Air Act\1\ in the event of an air pollution emergency.

\1\ Section 303, as amended in 1977 and codified at 42 U.S.C. Section 7603, reads as follows:

(a) Notwithstanding any other provision of this chapter, the Administrator, upon receipt of evidence that a pollution source or combination of sources (including moving sources) is presenting an imminent and substantial endangerment to the health of persons, and that the appropriate State or local authorities have not acted to abate such sources, may bring suit on behalf of the United States in the appropriate United States District Court to immediately restrain any person causing or contributing to the alleged pollution to stop the emission of air pollutants causing or contributing to such pollution or

to take such other actions as may be necessary. If it is not practicable to assure prompt protection of the health of persons solely by commencement of such a civil action, the Administrator may issue such orders as may be necessary to protect the health of persons who are, or may be, affected by such pollution source (or sources). Prior to taking any action under this section, the Administrator shall consult with the State and local authorities in order to confirm the correctness of the information on which the action proposed to be taken is based and to ascertain the action which such authorities are, or will be, taking. Such order shall be effective for a period of not more than 24 hours unless the Administrator begins an action under the first sentence of this subsection before the expiration of such period. Whenever the Administrator brings such an action within such period, such orders shall be effective for a period of 48 hours or such a longer period as may be authorized by the court pending litigation or thereafter.

(b) Any person who willfully violates, or fails or refuses to comply with, any order issued by the Administrator under subsection (a) of this section may, in an action brought in the appropriate United States District Court to enforce such order, be fined not more than $5,000 for each day during which such violation occurs or failure to comply continues.

This guideline is directed toward both meteorological episodes (e.g., thermal inversions) involving dangerously high levels of criteria or non-criteria pollutants, situations in which chronic exposure to air pollution causes endangerment by cumulative effect, and incidents involving industrial accidents or malfunctions (e.g., breakdown of pollution control devices) resulting in the release of air pollutants in hazardous concentrations.

statutory prerequisites

1. An Imminent and Substantial Endangerment to Health

The threshold prerequisite is the existence of ``evidence that a pollution source or combination of sources (including moving sources) is presenting an imminent and substantial risk of harm. It should be emphasized that endangerment means a risk or threat to human health, and that EPA should not delay action until actual injury occurs. Such delay would thwart the express intent of the Clean Air Act to protect the Nation's air quality in the interest of the public health. Section 303 is a precautionary provision, aimed at the avoidance of potential harm. This is best illustrated by the House Report on the Clean Act Amendments of 1977:

> In retaining the words ``imminent and substantial endangerment to the health of persons'', the committed intends that the authority of this section not be used where the risk of harm is completely speculative in nature or where the harm threatened is insubstantial. However, . . . the committee intends that this language be constructed by the courts and the Administrator so as to give paramount importance to the objective of protection of the public health. Administrative and judicial implementation of this authority must occur early enough to prevent the potential hazard from materializing.

H.R. Rep. No. 95-294, 95th Cong., Sess, 328 (1977) (emphasis added).

There is also some judicial opinion supporting an interpretation of

the endangerment standard as being merely precautionary, and permitting remedial action prior to the occurrence of any actual harm. In Ethyl Corporation v. Environmental Protection Agency, 541 F.2d 1 (D.C. Cir. 1976), the Court ruled that EPA had properly acted to regulate lead in gasoline upon finding, under Section 211 of the Clean Air Act, that lead emissions would ``endanger'' as requiring only a finding that lead emissions presented a ``significant risk'' of injury to the public. There were no finding of the presence of actual harm. In upholding the Agency's view of the ``endanger'' standard in Section 211, the Court explained:

> When one is endangered, harm is threatened; no actual injury need ever occur. A statute allowing for regulation in the face of danger is, necessarily, a precautionary statute. Regulatory action may be taken before the threatened harm occurs; indeed, the very existence of such precautionary legislation would seem to demand that regulatory action precede, and, optimally, prevent, the perceived threat.

541 F.2d at 13. In Reserve Mining Company v. Environmental Protection Agency, 514 F.2d 492 (8th cir. 1975), the court had similarly interpreted an endangerment standard in the Federal Water Pollution Control Act in a case involving asbestos discharges into Lake Superior. The court stated that ``Congress used the term ``endangering'' in a precautionary or preventive sense, and, therefore, evidence of potential harm as well as actual harm comes within the purview of that term.'' 514 F.2d at 528.

An important question for purposes of Section 303 of the Clean Air Act, however, concerns the effect of the modifying phrase ``imminent and substantial'' upon the meaning of ``endangerment.'' In Reserve Mining, the Court stated that the ``term `endangering' . . . connotes a lesser risk of harm than the phrase `imminent and substantial endangerment to the health of persons.' '' 514 F.2d at 528. Accord, Ethyl Corporation v. Environmental Protection Agency, 541 F.2d at 20 n.36. This issue is particularly important to EPA's ability under Section 303 to abate suspected carcinogens, the harm from which might take many years to manifest itself.

It is our position that in order to adequately safeguard public health by being in a position to preclude an air pollution emergency at its inception, the phrase ``imminent and substantial endangerment'' must be interpreted to refer to an imminent and substantial risk of harm, no matter how distant the manifestation of harm may be. If there exists a non-speculative risk of harm, the agency may properly act under Section 303. This is consistent with the legislative history quoted previously, and with the established definition of ``endangerment'' as referring to the risk of harm; not actual harm itself. This is also consistent with the 1970 Senate Report on Section 303, which states:

The levels of concentration of air pollution agents or combination of agents which substantially endanger health are levels which should never be reached in any community. When the prediction can reasonably be made that such elevated levels could be reached even for a short period of time--that it is that they are imminent--an emergency action plan should be implemented . . . S. Rep. No. 91-1196, 91st Cong., 2d Sess. 36 (1970). Thus, EPA may properly take action to abate air emissions when a substantial risk of harm is about to arise. This is several steps prior to the occurrence of any actual harm, but is

appropriate in view of the precautionary nature of Section 303.\2\

\2\ This permits the Agency to act to seek abatement of emissions reasonably believed to be carcinogenic but for which a harmful level, and the time for harm from such emissions to become apparent, are both uncertain.

This approach is also crucial to the Agency's ability to abate emissions which are believed to be but which are yet not confirmed as dangerous to human health. In United States v. Vertac Chemical Corporation, 489 F. Supp. 870 (E.D. Ark. 1980), the Court found the chemical dioxin, widely believed but not fully proven to be hazardous, to be presenting a ``reasonable medical concern over public health'' and to be thereby constituting an imminent and substantial endangerment to health under Section 7003 of the Resource Conservation and Recovery Act. Id. at 885. An Agency response under Section 303 of the Clean Air Act would be appropriate in the presence of pollutants reasonably believed to be dangerous to human health. As with regard to any pollutants sought to be abated under Section 303, EPA must be prepared to document the basis of its belief in the danger of these pollutants. If the Agency can show a ``reasonably medical concern'' created by the suspect emissions, it will have met the ``imminent and substantial endangerment'' test of Section 303.

Appendix L of the State Implementation Plan regulations (40 CFR Part 51) outlines a phased emission reduction program for air pollution emergencies involving criteria pollutants. In increasing degrees of seriousness, the levels are ``alert'', ``warning'', ``emergency'', and ``significant harm to health.'' The ``significant harm to health'' levels are levels at which actual injury occurs and are levels that should never be reached. It is not consistent with the intent of the Act for the Regional Offices to wait until the levels of ``significant harm to health,'' specified in 40 CFR 51.16(a), are reached prior to initiating a Section 303 action. The ``emergency'' level is intended to be the level at which action must be taken to avoid reaching levels of significant harm. Generally speaking, it is at these designated emergency levels that an imminent and substantial endangerment, i.e., an imminent and substantial risk to public health, is deemed to exist. The ``warning'' and ``alert'' levels specified in Appendix L are designed to ameliorate situations before the emergency stage by application of moderate controls.

Under certain circumstances an imminent and substantial endangerment to health may exist even though the Appendix L emergency levels have not been reached. Accordingly, the concentrations outlined in Appendix L as the ``emergency levels'' are only to be considered as a guide in determining when an imminent and substantial endangerment to health exists. Flexibility is essential and appropriate action must be taken pursuant to Section 303 whenever it is necessary to prevent the significant harm to health levels from being reached. For example, if review of forecasted meteorological conditions indicate that a situation is likely to deteriorate so rapidly that any action started at the emergency level in Appendix L would come too late to be effective in preventing the significant harm to health level from being, reached, the Agency should act at such earlier time as is necessary to allow for enforcement action to be effective. Moreover, emergency conditions may be present even if there is no clear prediction that specified endangerment levels will be reached. An imminent and substantial endangerment to health may exist, for example,

where pollutant concentrations lower than established emergency levels occur or are predicted to occur for an extended period of time.

With regard to non-criteria pollutants, sources of information on dangerous concentrations may vary. Among these are standards established by the Occupational Safety and Health Administration (OSHA) for exposure to air pollutants inside the workplace. Although not directly related to ambient air, these standards might provide a starting point for assessing the risk to the public when such pollutants, e.g., various organics, become airborne in a community. Computerized health effects data bases, such as Toxline and Chemline, might also be helpful. (These data bases are run by the National Library of Medicine and may be accessed through the EPA Headquarters or regional office libraries.) It will be necessary to gather scientific and medical data, in addition to meteorological data, in order to find an imminent and substantial endangerment to public health as a result of emissions of non-criteria pollutants. The role of experts for this purpose is discussed below.

2. State or Local Authorities Have Not Acted to Abate Pollution Source(s)

A second prerequisite to initiating a Section 303 action is that the Administrator receive evidence ``that appropriate State or local authorities have not acted to abate such sources.'' Section 51.16(a) of 40 CFR requires that each State Implementation Plan for a priority I region include a contingency plan which, as a minimum, provides for taking any emission control actions necessary to prevent ambient air pollutants concentrations of criterial pollutants from reaching levels which could cause significant harm to the health of persons. More specifically, the State Implementation Plans submitted to the Administrator were: (1) to specify two or more stages of episode criteria; (2) to provide for public announcements whenever any specific stage has been determined to exist; and (3) to specify emission control actions to be taken at each episode stage. (Section 51.16(g) of the Implementation Plan regulations requires that the State Implementation Plans for Priority II regions include, as a minimum, requirements (1) and (2);) Although Section 51.16 addresses only SIP contingency plans for criteria pollutants, the requirement of State or local failure to abate applies also to conditions involving non-criteria pollutants. The issue for purposes of implementing Section 303 is at what point it becomes the duty or the prerogative of EPA to act to abate an air pollution emergency.

Prevention and curtailment of an air pollution emergency is initially the responsibility of State and local governments. EPA has secondary responsibility for taking steps to avert emergency conditions. The Regional Office's initial duty, therefore, is to observe State and local abatement efforts (e.g., monitoring implementation of an emergency episode plan) and to render assistance should a State or locality request it. The Regional Office should take action under Section 303 only if State and local action is either unsuccessful or not forthcoming, as where a State lacks adequate abatement resources or simply refuses to attempt to abate the emergency. Under such circumstances, the Regional Office may assume primary responsibility for curtailing the emergency or, preferably, render technical assistance to the State's abatement efforts.

The time allowed for State and local government to take adequate action prior to EPA's assuming primary responsibility will obviously depend on the nature of the potential or actual emergency. The more the endangerment would be increased by delay, the shorter this lead-time

should be. All that is required by Section 303, however, is that State or local action be insufficient to abate or preclude the emergency conditions, and that the appropriate State or local agency by consulted in order to determine what action it intends to take, and whether the information upon which EPA intends to act is accurate. The requirement of consultation should not be viewed as an obstacle to effective action by EPA. As explained in the House Report on the 1977 Clean Air Amendments:

> The consultation requirement is in furtherance of the committee's intent that the Administrator not supplant effective State or local emergency abatement action. However, . . . if State and local efforts are not forthcoming in timely fashion to abate the hazardous condition, this provision would permit prompt action by the Administrator.

H.R. Rep. 95-294, 95th Cong., 1st Sess. 328 (1977). The consultation requirement is therefore not a concurrence requirement, but rather one of notification and corroboration prior to taking action. The scope of action taken by EPA should be restricted to what is necessary as a supplement to any action taken by State or local authorities, as, e.g., where a State is able to implement only portions of its SIP emergency episode plan, yet further action is needed to curtail the episode.

relief available under section 303

The foregoing statutory prerequisites apply to both the initiation of a civil action to abate an air pollution emergency and to the issuance of an order by the Administrator directly to the source of the hazardous air emissions, demanding a curtailment of those emissions. These two forms of relief--the civil action for an injunction and the administrative order--are briefly discussed below.

1. Injunctive Relief

Section 303 permits the Administrator to seek injunctive relief in a Federal district court ``upon receipt of evidence that a pollution source or combination of sources (including moving sources) is presenting an imminent and substantial endangerment to the health of persons, and that the appropriate State or local authorities have not acted to abate such sources . . .'' Pursuant to the Memorandum of Understanding between EPA and the Department of Justice, codified in Section 305 of the Clean Air Act, the action would be filed on behalf of the Administrator by the U.S. Attorney for the appropriate Federal court district. EPA Regional and Headquarters Offices, however, have the responsibility of providing all data and evidentiary material to the Department of Justice.

As will be discussed more fully below, it is essential to a successful civil action that expert testimony by elicited, either in the form of affidavits or through expert appearances at depositions or trial, regarding the risk of harmful effects to the health of persons from exposure to the relevant pollutant. This is especially so in the case of an emergency involving a non-criterial pollutant, the harmful levels or effects of which have not already been established by EPA or other agencies. A diligent effort should be made to obtain evidence, perhaps from citizen complaints or hospital records, that the particular emission sought to be controlled has in fact already caused adverse effects to the health of some individuals. Such evidence, while not essential to a Section 303 action, could be helpful in substantiating an imminent and substantial endangerment. Among the

experts to be consulted concerning hazardous pollutants and the presence and extent of any adverse health effects are physicians, epidemiologists, and toxicologists.

In addition, expert meteorological testimony is needed in order to assess the magnitude of hazardous pollutant concentrations and to pinpoint the source of the dangerous emissions, if not already known as in an area of numerous industrial point sources), and to ascertain the expected geographical breadth of the emergency, based upon such parameters as current and forecasted wind speed, wind direction, atmospheric stability, temperature, and precipitation.\3\

\3\ Atmospheric stability refers the degree of turbulence in the atmosphere.

The meteorological expert may also be able to predict the duration of an emergency episode by determining the time which will elapse before changed meteorological conditions might substantially improve the dispersion of the hazardous pollutant concentrations.

Also, experts in industrial processes and pollution controls will be needed in order to explain to a court the nature of the polluting process and what abatement options are available, e.g., plant shutdown versus reduced production. In any action for an injunction, a court can be expected to provide no more relief than is necessary, and place as light a burden as possible on the emitting source, in providing for effective curtailment of the air pollution emergency. The industrial expert will thus play a crucial role in the shaping of judicial relief in a Section 303 action.

This testimony--medical, scientific, meteorological, and technical--is essential to prevailing in a Section 303 suit. The burden of proof will be on the Government, which must show by a preponderance of the evidence that the defendant is the source of air pollutants which, by their very nature or because of existing meteorological conditions, have caused harm to individuals or are presenting and imminent and substantial risk of such harm. In order to assure the credibility of this testimony, sampling personnel should be prepared to testify to the reliability and quality assurance of the air samples evaluated by the experts.

The procedure for seeking an injunction are set forth in the Federal Rules of Civil Procedure, Rule 65 (copy attached). In the event that immediate relief is needed, Rule 65 provides for temporary injunctive relief in the form of a preliminary injunction which can be obtained from a Federal district court, after a hearing, in order to reduce further emissions of the suspect pollutant below emergency levels until a full trial can be held. The Government should be prepared to have its experts testify in court if preliminary or permanent injunction is sought.

The following should be kept in mind as elements of proof necessary to obtaining a preliminary injunction:

(1) Absent immediate injunctive relief, irreparable harm will be caused by the polluting source(s); (2) this harm would outweigh any harm to the source(s) from the granting of relief requiring the source(s) to abate emissions; (3) the risk to public health is sufficient to make success on the merits and the granting of a permanent injunction likely; and (4) the public interest necessitates immediate relief. See 7-pt. 2 Moores Federal Practice para, 65.04 (1980); See also United States v. Midwest Solvent Recovery, Inc., 484 F. Supp. 138.144 (N.D. Ind. 1980). In addition, Rule 65 provides for

injunctive relief in the form of 10-day temporary restraining order (TRO), which can be granted without a hearing while a motion for preliminary injunction is prepared.\4\

\4\ Only once has a TRO been requested under Section 303. The incident occurred in 1971, in Birmingham, AL. After local efforts to curtail emissions from several sources failed, a TRO was requested and granted under Section 303, requiring various process modifications and cessations.

Expert testimony in the form of affidavit should suffice for the purpose of obtaining a TRO.

The proof necessary to obtain a TRO is that immediate and irreparable injury will occur if injunctive relief is withheld until the defendant can be given notice and an opportunity to appear. Rule 65 implies that a hearing on a motion for preliminary injunction should take place as soon as possible after the granting of a TRO. Id., Para. 65.05-65.08; see also 4 West's Federal Forms Section 5297 (1970).

2. Administrative Order

Prior to the 1977 Clean Air Act Amendments, the only method of enforcement provided in Section 303 was injunctive relief from a Federal district court upon a showing of imminent and substantial endangerment from air pollutant emissions. The 1977 Amendments left this authority in place and added a provision authorizing the Administrator to issue an order to a source to take steps to curtail its emissions in the event ``it is not practicable to assure prompt protection of the health of persons solely by commencement of . . . a civil action.'' Within twenty-four hours of issuing the order, however, the Administrator must file a suit for injunctive relief, or the order will expire. Upon such filing, the court may then extend the life of the order pending litigation. Violation of the order may be penalized up to $5,000 per day per violation. This penalty may be sought in a civil action brought to enforce the order.\5\

\5\ This is analogous to the provision in Section 113(b) of the Clean Air Act for a civil action to enforce, and seek penalties for, violation of, an order issued under Section 113(a) to comply with emission limitations.

Also in such an action, a source may challenge the Administrator's basis for issuing the order.

This administrative order mechanism was intended by Congress to enhance EPA's emergency response capability even beyond that provided by the TRO process previously discussed. As explained in the 1977 House Report:

> Even more prompt action may be necessary where pollution levels exceed the never to be exceeded levels without prior forecast that this may occur . . . The committed bill reflects the committee's determination to confer completely adequate authority to deal promptly and effectively with emergency situations which jeopardize the health of persons. Thus, the section provides that if it is not practicable to assure prompt protection of health solely by commencement of a civil action, the Administrator may issue such orders as may be necessary for this purpose.

H.R. Rep. No.95-294, 95th Cong., 1st Sess. 327-28 (1977) (emphasis added). The administrative order is thus an available enforcement mechanism in those instances where even a TRO might be issued too late to effectively curtail an endangerment to public health. Such situations might be those involving emissions that are hazardous even in very limited duration of exposure, rendering a TRO too late to be fully effective, or situations which, although potentially quite harmful, are expected to be of very short duration, such that the emissions would cease before the TRO could issue e.g., the demolition of an asbestos-lined building). In such situations, the time required to gather the expert evidence in support of a TRO might defeat efforts to avert adverse public health effects, absent a more immediate enforcement mechanism.

The administrative order is just such a mechanism. Expert testimony is not required for issuance of an administrative order. What is needed, however, is evidence which reasonably leads the Administrator to believe that certain air emissions from particular sources are creating an imminent and substantial endangerment to public health. This evidence might be in the form of emissions data combined with adverse meteorological reports and medical bulletins. Provided the informal consultation requirement has been met, the Administrator may issue an order calling for abatement of emissions by whatever means the Administrator determines are necessary under the circumstances of the case. Because of the potential adverse economic impact of such an order upon the source, the order should require no more than what is clearly necessary to curtailing hazardous emissions. The fact that the order may only last twenty-four hours, during which time a TRO application and civil suit can feasibly be filed, and that the basis of the order may be challenged by any source subject to it in a proceeding to enforce the order, are indicative of Congress' intent that the order be immediately available although not necessarily supported by the best possible expert credible evidence.

Note that the administrative order may also be used to require additional sampling or monitoring by the suspected source with a view toward abating its emissions. This additional data can then be utilized in a subsequent civil action, if such an action is necessary to abatement.

Additional sampling and monitoring may also be required of a source through the use of Section 114 of the Clean Air Act. Section 113(a)(3) permits EPA to issue an order to a source if it fails to comply with a requirement of 114. Such an order is not effective until the person to whom it is issued has had an opportunity to confer with EPA.

Thus, Section 114 provides a mechanism for requiring source sampling and monitoring with a much lower standard of proof of violation than that required by Section 303. EPA may issue an order requiring sampling and monitoring under Section 114 for the purpose ``(i) of developing or assisting in the development of any implementation plan under Section 110 or 111(d), any standard of performance under Section 111, (ii) of determining whether any person is in violation of any such standard or any requirement of such a plan, or (iii) carrying out any provision of this Act . . .'' This is contrasted with the requirement under Section 303 that EPA have evidence that a source ``is presenting an imminent and substantial endangerment to the health of persons, and that appropriate State or local authorities have not acted to abate such sources.'' However, while the standard for issuing a 114 order is lower, a 114 testing order takes longer to enforce because it must be enforced by the

issuance of a 113(a)(3) order after the source has been offered an opportunity to confer.

delegations for issuing administrative orders and judicial complaints under section 303

I. Administrative Orders

Pursuant to Delegation 7-49, authority to issue administrative orders under Section 303 rests with the Regional Administrators and the Assistant Administrator for Air, Noise, and Radiation. The Regional Administrators must consult with the Associate Enforcement Counsel for Air before issuing such orders. The Assistant Administrator for Air, Noise and Radiation must consult in advance with the Associate Enforcement Counsel for Air and notify any affected Regional Administrator or their designees before issuing orders. Because speed is of the essence in issuing administrative orders under Section 303, the Headquarters concurrences card be issued by telephone and followed up later in writing.

II. Referral of Civil Actions for Injunctive Relief

Pursuant to Delegation 7-22-A, all referrals to the Department of Justice of requests for civil actions for emergency TRO's must be made the Special Counsel for Enforcement. The Special Counsel for Enforcement must notify the Assistant Administrator for Air, Noise and Radiation and the appropriate Regional Administrator when a case is referred to the Department of Justice.

forms for obtaining injunctive relief motion for temporary restraining order

The United States of America, by its undersigned attorneys, by authorization of the Attorney General and acting at the request of the Administrator of the Environmental Protection Agency, moves that this Court, in order to prevent irreparable injury to the United States and its citizens, enter immediately an order to restrain temporarily the defendants set for this in the complaint from discharging excessive (pollutant) into the ambient air pending action by this Court on the complaint filed this day by the United States in this cause, and in support of the motion, states:

Defendants are discharging from their plants and/or installations at (city, State), substantial amounts of (pollutant), into the ambient air. Such discharges (in combination with adverse weather conditions) have caused or are contributing to, concentrations of (pollutant), in the ambient air exceedings a level of (number) (units) of (pollutant). This level presents an imminent and substantial endangerment to the health of persons.

The appropriate State and local authorities have diligently attempted to decrease the level of contamination in the atmosphere. However, defendants continue to discharge (pollutant) into the ambient atmosphere causing imminent and substantial endangerment to the health of persons.

The presence of such levels of (pollutant) is a present and continuing danger to human health. Unless the discharges of (pollutant) are immediately restrained, the health of people in the area will continue to suffer immediate and irreparable harm.

Plaintiff further moves for said Temporary Restraining Order to be issued forthwith and without notice, on the ground that the discharge constitute and imminent and substantial endangerment to the health of persons.

Therefore, in view of the immediate danger to public health that the defendants are contributing to by the release of (pollutants) into the ambient air, plaintiff prays that the Court enter a temporary

restraining order immediately.

temporary restraining order

This cause came to be heard on the motion of plaintiff, upon the complaint herein and affidavits attached thereto, for a temporary restraining order; and, it appearing to the court therefrom that immediate and irreparable injury, loss and damage will result to the plaintiff before notice can be given and the defendant or his attorney can be heard in opposition to the granting of a temporary restraining order for the reason that continued levels of pollution by (pollutant) will cause irreparable damage to the health of persons, it is

ORDERED, that defendants set out in the complaint filed herein, their agents, servants, employees and attorneys and all persons in,active concert or participation with them are hereby restrained from causing or contributing the alleged pollution and each defendant separately must take the following action:

(List each defendant separately and state what immediate action that defendant must take).

ORDERED, that this order expire within 10 days after entry, unless within said time it is for good cause shown extended for a longer period, and it is further

ORDERED, that this order expire within 10 days after entry, unless within said time it is for good cause shown extended for a longer period, and it is further

ORDERED, that plaintiffs complaint be set for hearing on preliminary injunction on (date) at (time) of that day or as soon thereafter as counsel can be heard, in the United States District courtroom in the city of _____, State of_____.

This order issued at city, state, this _____ day of (month), (year).

complaint (for civil action)

The United States of America, by its undersigned attorneys and by authority of the Attorney General alleges that:

1. This is a civil action to enjoin the above names defendant(s) from discharging any (pollutant) into the ambient atmosphere from their manufacturing operations in the (city, state) area. Such discharges contribute to the imminent and substantial endangerment to the health of persons as determined by the Administrator of the Environmental Protection Agency. Authority to bring this action is in the Department of Justice by 42 USC 7605.

2. This court has jurisdiction of the subject matter of this action pursuant to 28 USC 1345.

3. Defendant(s) are corporations doing business in (city, state) within the _____ District of (Federal district court).

4. During normal operation of the defendants' plants the defendants discharge (pollutant) into the ambient air.

5. The Administrator of the Environmental Protection Agency has received evidence that a combination of pollution sources, including the defendant's plants, are presenting an imminent and substantial endangerment to the health of persons of discharging matter into the ambient air.

6. The appropriate State and local authorities have diligently attempted to decrease the level of contamination in the atmosphere. However, the various sources emitting (pollutant) in significant quantities, including the defendants plants, continue to discharge (pollutant) into the ambient atmosphere to levels that cause significant harm to the health of human beings.

7. The average (pollutant) level in the ambient air for the past

forty-eight (48) hours is approximately (number) (units). Such levels for such periods of time are harmful to the health of human beings.

8. The discharges of matter by the defendants should be eliminated pursuant to Section 303 of the Clean Air act which provides:

(a) Notwithstanding any other provisions of this Act, the Administrator upon receipt of evidence that a pollution source or combination of sources (including moving sources) is presenting an imminent and substantial endangerment to the health of persons, and that appropriate State or local authorities have not acted at abate such sources, may bring on behalf of the United States in the appropriate United States district court to immediately restrain any person causing or contributing to the alleged pollution to stop the emission of air pollutants causing or contributing to such pollution or to take such other action as may be necessary. If it is not practicable to assure prompt protection of the health of persons solely by commencement of such a civil action, the Administrator may issue such orders as may be necessary to protect the health of persons who are, or may be, affected by such pollution source (or sources). Prior to taking any action under this section, the Administrator shall consult with the State and local authorities in order to confirm the correctness of the information on which the action proposed to be taken is based and to ascertain the action which such authorities are, or will be, taking. Such order shall be effective for a period of not more than 24 hours unless the Administrator brings an action under the first sentence of this subsection before the expiration of such period. Whenever the Administrator brings such an action within such period, such order shall be effective for a period of 48 hours or such longer period as maybe authorized by the court pending litigation or thereafter.

(b) Any person who will fully violate or fails or refuses to comply with, any order issued by the Administrator under subsection (a) may, in an action brought in the appropriate United States district court to enforce such order, be fined not more than $5,000 for each day during which such violation occurs or failure to comply continues.

9. The continuous emission of (pollutant) into the ambient air the defendants contributes to the present situation which, if allowed to continue, will cause significant harm to the health of persons in the city area.

10. The United States of America and its citizens will suffer immediate and irreparable harm to their health unless the defendants are immediately restrained from discharging (pollutant) into.

wherefore, the united states prays

a. That the defendants, their officers, directors, agents, servants, employees, attorneys, successors, and assigns, and each of them cease the discharge of (pollutant) into the ambient air in a manner prescribed by this Court and not discharge such matter thereafter unless pursuant to instruction to do so from this Court.

b. That costs and disbursements of this action be awarded to the plaintiff; and

c. That this Court grant such other and further relief as it seem just and proper.

(no signature necessary)

united states environmental protection agency region

(Address)

IN THE MATTER OF _____

(source)

DOCKET NO (_____)

SECTION 303 OF THE CLEAN _____)

AIR ACT, AS AMENDED, _____)
42 U.S.C. Section 7401 et seq., _____)
42 U.S.C. Section 7603 _____)

_____

The Regional Administrator for Region (_____) of the United States Environmental Protection Agency (EPA) makes the following Findings of Fact, reaches the following Conclusion of Law and Issues the following Order:

findings of fact

1. The Administrator of EPA his delegated the authority vested in him by Section 303 of the Clean Air Act (the Act) as amended, 42 U.S.C. Section 7401 et seq., 42 U.S.C. Section 7603, to the Regional Administrator for Region (_____).

2. Section 303 of the Act, 42 U.S.C. Section 7603 provides that, upon receipt of evidence that a pollution source or combination of sources is presenting an imminent and substantial endangerment to the health of persons and that appropriate State or local authorities have not acted to abate such sources, the Administrator may issue such orders as may be necessary to protect the health of persons who are, or may be, affected by such pollution source or sources.

3. Defendants are discharging from their plants and/or installations at (city/State), substantial amounts of (pollutant), into the ambient air.

Such discharges (in combination with adverse weather conditions) have caused or are contributing to, concentrations of (pollutant)), in the ambient air exceeding a level of (number) (units) of (pollutant).

This level presents an imminent and substantial endangerment to the health of persons.

4. (source) is a source which is presenting an imminent and substantial endangerment to the health of persons.

5.(state) and (local jurisdiction) authorities have not acted to abate (list sources).

OR

(state) and (local jurisdiction) authorities have diligently attempted decrease the level of contamination in the atmosphere. However, defendants continue to discharge (pollutant) into the ambient atmosphere causing imminent and substantial endangerment to the health of persons.

conclusion of law

1. The Regional Administrator for Region ( ) The Regional Administrator, is vested with the authority of the Administrator under Section 303 of the Act, 42 U.S.C. Section 7603.

2. Source(s) have been found by the Regional Administrator to be presenting an imminent and substantial endangerment to the health of persons and to be an appropriate subject for the issuance of an order under Section 303 of the Act.

order

The Regional Administrator for Region ( ) hereby orders that defendants set out in this order, their agents, servants, employees and attorneys and all persons in active concert or participation with them are hereby ordered to refrain from causing or contributing to levels of pollution that will cause irreparable damage to the health of persons and each defendant separately must take the following action:

1. (List each defendant separately and state what immediate action that defendant must take.)

2. This order shall be effective for a period of not more than twenty-four hours unless the Regional Administrator files a civil action on behalf of the United States in the appropriate United States district court to immediately restrain any person causing or contributing to the alleged pollution to stop the emission of air pollutants causing or contributing to such pollution or to take such other actions as may be necessary.

3. This Order is effective immediately upon receipt by defendants. The Regional Administrator for Region ( ) hereby issues the above-identified Order which shall become effective as provided therein.

_____

Statement of Elizabeth H. Berger, Resident, New York City

Chairman Lieberman, Ranking Member Voinovich, committee members, staff members, esteemed panelists and neighbors, thank you for inviting me to tell you about the doubts, concerns and questions which have confronted those of us living and working in Lower Manhattan every day since September 11th. We live in a time of deep uncertainty, but are required to make countless decisions that may affect our health and that of our children for decades to come.

I have lived south of Fulton Street for more than 19 years. My husband and I bought our first home here, brought our children home here from the hospital and helped site the local nursery school. We remember life downtown before there was a single all-night deli (it opened on Fulton Street for Op Sail in 1986), when restaurants closed early Friday evening and didn't reopen until Monday lunch (except the Roxy Diner on John Street, which stayed open through Saturday night), when the closest supermarkets were in New Jersey. In those days, we schlepped bags on the subway and had everything else delivered, basic things most New Yorkers take for granted: dry cleaning, fresh vegetables, laundry detergent.

But we loved being downtown. We loved the huge buildings on the narrow, winding streets, we loved being close to the water and really knowing in some powerful, visceral way that Manhattan was an island. We loved the views, all the subways and weird bus lines, the scale and the feeling that we were at the center and beginning of everything.

We loved the way we and other downtown pioneers turned a business district into a community. This was especially true as we had children: the World Trade Center was our indoor play space, our mall, our theatre. It was where we flew kites, went rollerskating, learned to ride two-wheelers, and the only place to buy a decent loaf of bread. Dancers performed there, and musicians, and Ernie and Bert. My children, who are 5 and 2, spent part of every day of their lives at the World Trade Center.

This is why it is so absurd to heed the call to return to normal. There is no more normal for all of us.

I saw the first plane before it hit. Our building was evacuated. It was 8 days before we knew that it was structurally sound, another few weeks before we were assured that 1 Liberty wouldn't topple on us. That entire time, I thought not of the apartment we might lose--of our home, the 5,000 family photos, the important papers, my grandmother's jewelry, my children's drawings and my husband-the-writer's life work--but of the destruction of our community: 20 years work gone in 18 minutes.

The theme of my remarks is uncertainty, but I never doubted that we would return. We helped build downtown, and we'll help rebuild it. It was after the city recertified our building for reoccupancy about 6 weeks after the attack, that I realized that the question was not

whether by how. From a health perspective, there has been little guidance and fewer answers.

When I first returned to our apartment, I just sat down and cried. It was a mess and we spent 2 hours cleaning it--not the dust that covered everything, thinly in some places, like when the butler in English movies goes upstairs and reopens the ballroom that has been closed for 10 years, and thickly in others, like a blanket--but the French toast that had been sitting on the table since my husband and son had hurriedly left 2 weeks before. It didn't occur to us to wear masks or take off our shoes. We just needed to straighten up. Recall, in this regard, that it is the city's job to certify for structural integrity, not for environmental safety; I knew this, but didn't quite get what it meant until later.

We then began the great education process which has made downtown residents experts in products and services we never knew existed: FEMA, HEPA, OSHA. We all learned fairly quickly which were the best cleaning companies and scientific testers, but what no one, to this day, can agree on is what clean means and how to measure it.

It took eight guys in white suits and respirators 5 days to clean my apartment. But is it clean? No one tells you what to keep and what to toss. In October, I attended a panel discussion at Cooper Union featuring leaders in the field of pediatric environmental health--who knew it existed--including, Dr. Landrigan's associate, and among six doctors there were seven opinions, ranging, in essence, from throw it in the washing machine to get out of town and don't look back.

What's in the stuff? Every day the air smelled different and the winds blew a different course.

We reluctantly made our own rules, divined from press reports, high school science as we remembered it and the advice of friends and neighbors. But even that was mixed. One scientist friend had his apartment tested and declared it safe for his family; the managing agent of his building, however, reported high levels of asbestos and lead. In the end, 248 stuffed animals, 8 handmade baby quilts, 5 mattresses, a trousseau's worth of sheets and towels, a kitchen full of food and 13 leaf-and-lawn bags of toys went into our trash, but not our books, draperies and upholstered furniture or our clothes, though the bill to dry clean them industrially was $16,500 (and they all came back on individual wire hangers with individual plastic covers and individual twist-ties). We washed the walls, but didn't repaint. Some people we know repainted, but kept their mattresses. Some people kept their stuffed animals but threw away their furniture. Some people kept what they couldn't bear to lose and got rid of the rest. We have still not decided what to do about our floors: will stripping, sanding and resealing them contain the toxic mix of asbestos, fiberglass, concrete, human remains, heavy metals and the vague ``particulates,'' or just release more of it into our indoor air?

Indoor air quality is a touchy issue in our building. Converted in the late 1970's, we have a primitive central air system that circulates air from apartment to apartment. Some people in our building hired professional cleaners. Others did it themselves, and a few locked the door and didn't come back for a while. After the guys in the suits left, we sealed our windows, filtered our vents and bought six triple-HEPA-filtered air purifiers, which we run 24 hours a day. My clean air is making its way through the building, as is that of my less fastidious neighbors.

The same is true for outdoor air. All of our building's systems and public spaces have been professionally cleaned, following City DEP

guidelines, yet we are surrounded by Class B commercial buildings that have either not been cleaned or have been cleaned summarily. We live on the 11th floor, and see the porters, without protective gear, up on the roofs with push brooms. That stuff, too, is coming through our vents. My son's nursery school vigorously cleaned its outdoor play space, then stopped using it. PS 234 is now back, but the kids are not allowed to run in the yard. We don't live in a bubble. If the outdoor air's not good enough to breathe, how can we breath it inside?

In our case, much of this debate has been academic. The mantra of real estate is ``location, location, location'' and, given ours, we decided that it would be foolish to return our two young children to their home until the fires went out. Although we were urged to return to normal, we were chastened by early reports of high asbestos and heavy metal readings in the Warm Zone; though we were told we were in the Financial District Zone, our building's front door was 20 feet from the fence.

Our view was controversial. It was based on intuition, not hard science or ``facts.'' Our pediatrician didn't necessarily agree. Several of our neighbors with children were back. But every time we waffled, something else would happen: the benzene plume, high asbestos readings on the debris, the fire fighters' cough. We have only been home for 3 weeks. All of us are happier, but are we safe?

We've opened our windows, but are avoiding the park. Some of our neighbors have HEPA window screens. Some still have the duct tape. Others have put their apartments on the market.

What's the right thing to do? Ours is a culture based on authority, and to date there has been none. We would do whatever we needed to do, if only we knew what that was. In this regard, the failure of the Federal regulators to recognize that ours is a residential community and that OSHA standards simply do not apply is an outrage. Burning computers, fluorescent bulbs, copiers, electrolytic fluid and bodies . . . let me tell you, everyone downtown knows that we are the baseline of the 30-year study on what happens when worlds collide. As a parent, that is the most frightening responsibility I have ever faced.

The attack on the World Trade Center was an attack on America, and has led me to consider the whole idea of being American in a new and unironic way. What I do find ironic, however, is that the only authority I have found with respect to cleaning up the mess is William James, the father of Pragmatism, arguably the only American contribution to world philosophy. As the Harvard professor said in a lecture he gave right here in New York City in 1907, at Columbia University, ``we have to live today by what truth we can get today, and be ready tomorrow to call it falsehood.'' I first read that as a 19-year-old college student, and thought it was pretty cynical stuff. Now, as a 41-year-old mother of two, while I'm horrified by the implications for my children's future, I know it is the only way we can live.

Thank you.

U.S. Environmental Protection Agency

Memorandum

January 11, 2002

Subject: LPreliminary Assessment, Asbestos in Manhattan Compared to Libby Superfund Site; Why Cleanup of WTC Contamination is Ineffective to Date; Advantages of Cleanup Under Superfund Statute; and Summary

Risk Assessment for WTC Fallout

From: LCate Jenkins, Ph.D.

To: LAffected Parties and Responsible Officials

This memorandum compares data for asbestos in settled dusts and air inside residences in the town of Libby, MT, which is designated as a Superfund site due to this residential contamination, and similar data for the interior of buildings in Lower Manhattan contaminated by fallout from the World Trade Center (WTC). The reasons why the current cleanup of WTC dusts inside buildings is ineffective is also discussed, along with the advantages in addressing the cleanup through the Superfund statute.

In addition, this memorandum provides a summary of calculated cancer risks for occupancy of Lower Manhattan buildings, which was performed in more detail in my December 19, 2001 memo.[1] Whereas high level EPA and NYC officials have stated in sworn testimony and to the press that there were no such risks,[2] the appropriate offices in EPA have been effectively proscribed from conducting such a preliminary evaluation.

The analyses, projections, and opinions in this memorandum represent my own professional judgment and do not necessarily represent the official position of the U.S. Environmental Protection Agency, and has not been reviewed by EPA. This memorandum is not intended as any final or definitive assessment risks from continued and past exposures to asbestos in Manhattan.

1. asbestos contamination in buildings, manhattan compared to libby superfund site

In Libby, MT, interiors of homes and residential soils have been contaminated with asbestos from an adjacent vermiculite mining operation. Homes have vermiculite insulation in attics, and vermiculite was used for gardening. In addition, there are numerous waste piles of vermiculite in the area.[3] On December 20, 2001, the Governor of Montana designated Libby for fast-track listing as a Superfund site under the Comprehensive Environmental Response and Liability Act (CERCLA).[4]

In Lower Manhattan, interiors of residences and offices were contaminated with asbestos, fiberglass, fine particulate matter, and possibly significant concentrations of other toxic materials from the fallout from the implosion of the World Trade Center (WTC).

Tables at the end of this memo provide levels of asbestos in settled dusts and air in two apartments before cleanup from the Ground Zero Task Force Study,[5] and levels of asbestos in settled dusts in one apartment after cleanup from a study by the New York Environmental Law and Justice Project.[6]

Use of ``PCM-equivalent'' asbestos data from Manhattan for comparison to Libby

In order to compare asbestos levels found in Manhattan with that from Libby, the data in the tables is for asbestos fibers longer than 5 m, width greater than 0.25 m, and an aspect ration greater than or equal to 3 to 1. This is called ``PCM-equivalent asbestos.'' The data from Libby only includes asbestos levels that are PCM-equivalent. The Ground Zero Task Force Study[7] of WTC contamination provided not only total asbestos levels, but also PCM-equivalent asbestos levels.

The reason why only fibers longer than 5 m (PCM-

equivalent) are given in the Libby risk assessment is because many believe that asbestos fibers shorter than this cannot cause cancer, because they can be eliminated from the body. Not all agree.

Comparison of Libby and Lower Manhattan data

As can be seen from the above tables, the asbestos contamination in Lower Manhattan, up to seven blocks away from Ground Zero, is comparable or higher than that found in Libby, Montana, a designated Superfund site.

Most of the available data for Manhattan is before even a rudimentary cleanup. One particular piece of data, the residue inside an air vent at 105 Duane St., three blocks outside the boundary where EPA said there was any contamination (7 blocks from Ground Zero), is particularly alarming. This air duct sample was taken on December 3, 2001, long after all cleanups that had been thought necessary were completed.

The highest level of dust inside a building in Manhattan was 79,000 structures (asbestos fibers) per square centimeter (s/cm^2). This was at 45 Warren St., an apartment building 4 blocks away from Ground Zero where all of the windows faced north, away from the World Trade Towers, locked in on all other 3 sides by other buildings. To the casual observer, this apartment would not be described as being heavily contaminated. There is a color photograph included at the beginning of the study,[8] where a dining room table showing only a light dusting from WTC fallout, the dark grain of the wood clearly visible.

In comparison, the highest concentration of interior dust found inside a home at Libby was only 3658 s/cm^2. This means the highest amount of asbestos lying on a surface in Manhattan was 22 times that ever found in Libby.

The logical question thus arises: Why is EPA leaving people to their own devices in the cleanup of New York City, while intervening to clean homes at taxpayers expense in Libby because of an ``imminent and substantial endangerment to public health''?

2. ineffective cleanup of wtc asbestos to date

To date, the cleanup of the WTC fallout containing asbestos, fiberglass, fine particulate matter, and possible significant concentrations of other toxic materials is not proceeding efficiently or effectively.

Asbestos does not leave buildings with ordinary cleaning methods

The asbestos contamination is not going to leave buildings in Manhattan by itself with ordinary cleaning any more than it will in Libby. In the case of Libby, MT, the EPA stated:[9]

> This indicates that there are multiple locations around Libby that are likely to contain asbestos fibers in indoor dust, and that this dust may serve as an on-going source of potential exposure for residents.

Note that the dusts inside Libby residences were found to have the highest calculated cancer risks for the Superfund-designated site.

Complex regulatory strategies and whole environmental statutes address the necessary protocols for asbestos abatement inside buildings, just because it will not go away by itself after a few weeks, months, or years with ordinary cleaning measures. The National Emission Standards for Hazardous Air Pollutants (NESHAPS) under the Clean Air Act and the regulatory requirements under the Asbestos Hazard Emergency Response Act (AHERA) both include rigorous methods to stringently clean every surface, like inside air ducts, and removal of

carpets, drapes, and upholstered furniture which cannot be effectively cleaned, even AFTER the offending asbestos objects such as insulation, ceiling tiles, and asbestos floor tiles have been removed from the building. During these abatements, trained certified personnel must be wearing HEPA respirators and protective clothing. Etc.

EPA's crude air testing cannot detect hazardous levels of asbestos

EPA has demonstrated a willingness and promptness in responding to concerns of citizens by coming out to apartments and other buildings and conducting an air test for asbestos. This test is called the ``AHERA TEM clearance test,'' which stands for Asbestos Hazard Emergency Response Act transmission electron microscopy. EPA is using this AHERA TEM clearance test and claiming that if is shows 70 or fewer asbestos structures per square millimeter, then the air is safe:[10]

> In evaluating data from the World Trade Center and the surrounding areas, EPA is using a protective standard under AHERA, the Asbestos Hazard Emergency Response Act, to evaluate the risk from asbestos in the outdoor and indoor air. This is a very stringent standard . . . The number of structures--material that has asbestos fibers on or in it--is then counted. The measurements must be 70 or fewer structures per square millimeter . . . .

This statement by EPA is false and a gross misrepresentation of the AHERA regulations which do not in any way claim that a simple air test alone showing 70 or fewer structures per square millimeter can be used directly to determine if air is safe.

AHERA TEM clearance test not sensitive enough to detect hazardous levels of asbestos

The first, and fatal problem in using the AHERA TEM test is that it is quite insensitive. It cannot detect airborne asbestos at levels that are shown to cause excessive cancers.

First, it is necessary to explain a very confusing way in which the results of the AHERA TEM test are reported. There are three different ways to express the results, using one or all of the following units of measure:

- structures per square millimeter (s/mm^2)
- structures per milliliter (s/mL)
- structure per cubic centimeter (s/cm^3)

The ``structures per square millimeter'' unit is the value the laboratory gets first, before converting it to structures per milliliter. The lab needs to use the volume of air pulled across the filter to make this conversion. Since a ``milliliter'' is the exact same volume as a ``cubic centimeter,'' the last two units are identical and used interchangeably. See my December 19 memo for a more detailed explanation.

EPA has been giving test results using the ``structures per square millimeter'' units. EPA will typically describe results as ``below 70 structures per square millimeter'' or however much was detected above 70. But what does 70 s/mm^2 mean? This is not a SAFE level.

This is only the lowest level that the method can detect. This 70 structures per square millimeter (s/mm^2) level is equivalent to 0.02 structures per milliliter (s/mL):

The 0.02 s/mL (which is equivalent to 70 s/mm^2) level is not a safe level. It is only the lowest level that the method can detect because of the method background (there is asbestos in the

cellulose filters used to collect the air). The EPA has determined that a concentration of asbestos in air that is 0.0004 s/mL will result in an increased risk of cancer of 1 in 10 thousand.[11] An elevated cancer risk of over 1 in ten thousand is the action level, or trigger, for EPA to declare an imminent and substantial endangerment to public health under CERCLA, as explained in Section 4 of this memo. Thus, the AHERA TEM clearance text can only tell if the air has 50 times the safe level (or 10 times the safe level if it is assumed that only 20 percent of the asbestos is in the hazardous size range called ``PCM-equivalent.'').

Air testing under passive conditions will not detect ``real world'' asbestos levels

EPA is conducting the AHERA TEM clearance test under passive conditions when the dusts are not being disturbed. As discussed in the Ground Zero Task Force study[12] and my December 19 memo,[13] any activities which stir up dusts will result in vastly higher airborne asbestos concentrations.

I suggest that when a Government Agency comes out to test air for asbestos, be prepared to have the air drawn from a ``human activity simulator.'' Have a large box with the open end sitting on carpeting or on a couch that was contaminated. Have a plunger like a broom stick mounted to a flat board about 1 foot square. (Use a broom if you have to.) Put the plunger through a hole in the top of the box. You will be making something the equivalent to a butter churn. Have 3-inch holes on both sides of the box so that air can enter and exit. Then, the EPA or NYC health inspector can draw air through the hole in one side of the box while you are beating the carpet or the couch with the paddle. If EPA tells you that this violates the testing protocols, reply that even using the AHERA TEM test in lieu of certified professional abatement violates the protocols.

EPA's air testing violates the AHERA protocols

By even performing the AHERA TEM clearance test in lieu of professional asbestos abatement, EPA is violating the AHERA regulations. This is because the AHERA TEM clearance test is only allowed in conjunction with a whole range of asbestos abatement procedures that go on prior to even taking the test.[14] It was designed to catch only gross contamination problems caused by some worker on the asbestos abatement project, such as emptying one bag of asbestos contaminated material into another inside a room that had previously been carefully abated.

EPA use of 1 percent asbestos level for cleanups will result in ineffective cleanups

There is another reason why the cleanup will be ineffective. Both EPA[15] and the NYC Department of Environmental Protection (NYC DEP) are claiming that only dusts over 1 percent asbestos or more are hazardous. The NYC Department of Environmental Protection (NYC DEP) advised building owners[16] to test dusts inside buildings to see if they were over 1 percent. They said that if the dusts were over 1 percent, a professional asbestos abatement contractor should be used for an inspection and cleaning:

> EPA is using the 1 percent definition in evaluating exterior dust samples in the Lower Manhattan area near the World Trade Center. All affected landlords have been instructed to test dust samples within their buildings utilizing this standard. Landlords were notified that they should not reopen any building until a competent professional had properly inspected

their premise. If more than 1 percent asbestos was found and testing and cleaning was necessary, it had to be performed by certified personnel.

This has presented problems, because there was no way for a landlord to test at the 1 percent level if the dust was present in a fine layer, and because dusts containing less than 1 percent are known to be hazardous by EPA.

EPA determination that dusts and soils containing less than 1 percent asbestos are hazardous

The U.S. EPA has clearly stated that levels of asbestos lower than 1 percent could present hazards:''[17]

> Levels of 1 percent or less could present a risk where there is enough activity to stir up soil and cause asbestos fibers to become airborne.

In one independent study, it was found that soils containing only 0.001 percent asbestos were still capable of producing measurable airborne asbestos concentrations greater than 0.01 fibers per milliliter (equivalent to structures per milliliter).[18] This air concentration is over the action level for declaring a public health emergency, as discussed above for the sensitivity for the AHERA TEM clearance test.

EPA Region 2, by its own actions, has demonstrated its belief that asbestos in dust at levels lower than 1 percent are hazardous

There is another very important reason to believe that dust containing less than 1 percent asbestos is unsafe: EPA Region 2 believes it is, and was willing to use taxpayer dollars to remove it from their own building in NYC. This is what happened:

First, the EPA found no asbestos in any of WTC fallout samples outdoors that was over 1 percent north of Warren St.[19] As a result, EPA told the press and everyone that the only contaminated areas were below Warren St. and West of Broadway, the ``zone of contamination.'' Next, EPA referred everyone to the NYC Department of Health (NYC DOH) cleanup recommendations[20] inside this same ``zone of contamination'' south of Warren. These are the controversial recommendations which do not even recommend HEPA respirators, which just say ``avoid breathing the dust'' while you mop up the asbestos.

This is what happened next: EPA's offices are at 290 Broadway, which is 2 blocks north of Warren St., outside the ``zone of contamination.'' Even though EPA said there was no asbestos over 1 percent up this far north at its offices, and that it was safe, EPA had its own offices cleaned by certified asbestos abatement contractors. At taxpayer expense.

Aside from considerations of criminal negligence and intentional failure to warn citizens in both the ``zone of contamination'' and outside this zone that they also should be using certified professional asbestos abatement contractors--aside from these considerations, EPA Region 2 at a minimum has demonstrated its recognition that dusts containing less than 1 percent asbestos are hazardous.

There are no AHERA or other test methods for percent levels of asbestos in thin layers of settled dusts

Unless the windows were blown out by the blast, WTC fallout inside buildings in Manhattan was usually in thin layers, too thin to scoop up into a jar or bag. Only dusts that can be put into a bag or jar can be

tested for the percentage of asbestos by the PLM percent asbestos method.

If there is only a thin, visible surface dusting, or even an invisible layer of dust, you are required to use what are called ``wipe'' samples or ``microvacuum'' samples. Wipe samples can only be tested for the number of asbestos fibers per area, not a percentage of asbestos in the total dust. These are not AHERA methods or even EPA-validated methods, but they are used for Superfund investigations. Thus, it was impossible for a landlord to test premises in most cases for whether or not the asbestos was present at 1 percent or higher, because there was not enough dust to use the PLM method.

It is inexcusable to try to brush together enough surface dust to make up a ``bulk'' sample that can be placed in a jar for PLM percent asbestos testing. This violates the method, and results in a highly diluted sample due to the mixture with other dusts that are present, as well as subjecting the very fine asbestos to escape to the air during the brushing process.

Under the AHERA standard, which EPA claims it is using, the 1 percent level only applies to the material from which the asbestos dust originated. All of the sample collection methods for PLM asbestos analysis in the AHERA regulations at 40 CFR Part 763 address collection of asbestos containing materials themselves. There are very strict separate procedures for collecting samples of each particular type of asbestos containing material, such as floor or ceiling tiles, or insulation. There are no methods or protocols for taking dust samples from surfaces. Thus, trying to run a PLM percent asbestos test on dust violates the AHERA regulations.

The PLM method for percent asbestos is too insensitive to find asbestos at levels of concern

EPA used PLM percent asbestos analyses of thick WTC fallout on streets outdoors. Many, if not most, of these samples showed no detectable asbestos[21] See the tables at the end of this memo for a summary of the findings. The PLM method is unreliable at concentrations of 1 percent and less. In other investigations, EPA found that soil samples below the level of detection of PLM did in fact have high levels of asbestos when analyzed with SEM (scanning electron microscopy) methods.[22] Thus, many of the outdoor dust samples in Manhattan probably were actually contaminated with asbestos.

Likewise, if landlords did manage to test their fine indoor dust layers and found no asbestos by the PLM method, it could well have been there in hazardous amounts.

Current EPA recommendations for Manhattan Cleanup Will Leave Most Asbestos

To this date, EPA still recommends the unsafe and ineffective cleanup recommendations of the NYC Department of Health (NYC DOH). The EPA web page from early October until this present day specifically states that schools, businesses, and residences should be cleaned using the NYC DOH methods.[23] Not only are these methods ineffective, they are also unsafe to those who follow them, as detailed in my December 3 and 19, 2001 memoranda.[24]

Dry-type HEPA vacuums do not remove asbestos from carpets

The NYC DOH recommends dry-type HEPA vacuum cleaners, even though the EPA has found that dry-type HEPA vacuum cleaners simply do not remove the asbestos from the carpeting any better than a regular vacuum cleaner, removing essentially none at all.[25] Professional abatement firms recognize that dry HEPA vacuums are ineffective in removing asbestos. There is documentation of at least one certified

asbestos abatement firm who removed and disposed of all carpeting which was over padding in common areas in an apartment building near Ground Zero, in recognition of the fact that there was no way to remove the asbestos.[26]

The same EPA studies also document the fact that even the wet-extraction HEPA vacuum cleaners are inefficient in removing asbestos from carpeting--only 60-70 percent.

Upholstered furniture, drapes, vents and ducts not addressed by NYC recommendations

The NYC DOH recommendations also do not address the problem of upholstered furniture, which is almost impossible to effectively clean. Draperies are another problem, often too large for washing in machines, and some must be dry cleaned. Therefore, cross-contamination will occur if these drapes are sent to commercial facilities for cleaning.

The NYC DOH also does not address the problem of contaminated duct work, or air conditioners or other contaminated equipment, lice the insides of computers which use cooling fans.

Any EPA recommendation of professional asbestos abatement not enforceable

EPA officials have claimed they recommended professional asbestos abatement for buildings ``unless they only had a light dusting.''[27] Even if EPA has issued such guidance, it will not result in effective asbestos removal, because EPA has no legal authority to enforce the use of certified asbestos abatement contractors. The EPA has stated that it is using the AHERA statute as the authority or standard for cleanup after the WTC disaster. This statute only requires schools to use certified asbestos abatement professionals. For the owners of buildings, the only requirement is that if the owner does choose to have an asbestos inspection, then a certified professional must be used. It does not require that any advice or action resulting from that inspection be followed. The owners of many buildings have not been hiring certified asbestos abatement professionals, even when they were heavily contaminated.[28]

For tenants, the AHERA has no effect whatsoever. Many, if not most, tenants have been cleaning their own apartments.[29]

High cost of professional abatement prohibitive to most, preventing effective cleanup

Because professional asbestos abatement is expensive, tenants have chosen to perform their own cleanups or hire unqualified persons. For a 2-bedroom apartment, the cost of professional abatement is $5,000; for a 2-bedroom apartment, the cost is around $10,000. That would not include the costs of replacement of any carpeting, upholstered furniture, or draperies that cannot be effectively cleaned.

Recently, Bonnie Bellow of the EPA Region 2 press office claimed that tenants do not have to pay for their cleanups; that all they have to do is apply to the Federal Emergency Management Administration (FEMA) for reimbursement. This is false, and not borne out by the many accounts of citizens trying to apply for such costs. Some insurance companies have paid for cleaning, but others have not. Sometimes volunteers cleaned out buildings, and sometimes the Red Cross handed out vouchers for cleaning, but not by professional asbestos abaters. There are no statistics on what has actually happened.

Disorganized cleanup resulting in re-contamination of previously cleaned areas

The disorganization of the cleanup is resulting in cross-contamination of previously cleaned areas. Some individual apartments may well be cleaned using professional abatement. But if another

apartment is not cleaned, the air ducts for the whole building can become contaminated again. Dusts can be tracked from one area inside the building which is not effectively cleaned to another area which is cleaned.

3. advantages for a cleanup under superfund

At this time, I believe that the best solution to the problem in Lower Manhattan is to invoke one or more parts of the Comprehensive Environmental Response and Liability Act (CERCLA), or Superfund. It would bring order to the situation and begin to alleviate the current exposures to asbestos, fiberglass, fine particulates, and other toxic substances like mercury and lead. It would enable the use of better methods to test and monitor the contamination, particularly for asbestos. It would take the financial burden away from citizens and transfer them to the Government.

It would add credibility to the final solution after the action was completed. Under CERCLA, there would be a point in time where the Government could announce that the action was finished, and that Manhattan was restored. Otherwise, there will be no opportunity for the government to declare closure.

Two types of action under Superfund are possible

In Montana, the Governor exercised the ``silver bullet'' option under CERCLA by requesting that EPA put Libby on the fast track for listing on the National Priorities List, which means making it a Superfund site. As a result, Libby does not have to wait years for EPA to assess its hazards and make comparative cost-benefit judgments. Federal money would go immediately to the cleanup, although the State would be required to contribute 10 percent of the costs. The costs should not be a problem to New York, as the Federal Government is already contributing as much as it will take to put Manhattan back together.

Another option would be to declare a public health emergency under the CERCLA authority. Even though Libby is now scheduled for fast track Superfund listing, EPA is now apparently intending to invoke this other authority to address the situation at Libby. EPA has never before invoked this authority under CERCLA. If EPA does invoke it for Libby, it should be no problem to use it for Lower Manhattan.

Stigmatization of a Superfund balanced by public confidence and a point of closure

There would be considerable stigmatization in a Superfund listing for Lower Manhattan, potentially increasing the rate of economic decline. However, the widespread knowledge of health concerns even without a Superfund listing may have already had that effect. Declaration of a public health emergency or a Superfund listing, followed by an efficient and organized cleanup, with all watchdog scientists agreeing on protocols, may actually help the public's perception and restore confidence. Right now there is nothing but chaos.

Cleanup using AHERA is not working

As seen from the preceding section, the cleanup is not proceeding effectively. This is because EPA is trying to use the AHERA statute as the authority. The AHERA statute is voluntary for all but schools. The AHERA statute places the financial burden on the public.

The AHERA statute also specifies certain antiquated test methods for asbestos, which offer some protection, but only if used in conjunction with all of the other rigorous asbestos abatement procedures which can only be performed by certified contractors. EPA is trying to adapt these insensitive test methods, the AHERA TEM clearance

test for air, and the PLM test for asbestos, to situations which they were not intended by the regulations.

Cleanup under CERCLA authority would allow the use of better testing methods

Under the CERCLA statute, there is no prohibition against using the best testing methods available. See the tables at the end of this memo. The test methods which were used are described along with the data. For the Libby Superfund site, Dr. Eric Chatfield designed the testing protocols and chose the methods he believed were the best. These methods were not limited to methods that the EPA had developed and validated, but included methods developed by the American Society for Testing and Materials (ASTM) and the International Standards Organization (ISO).

Dr. Chatfield was also the lead investigator in the Ground Zero Task Force study of Lower Manhattan, where state-of-the-art methods were again used. The HP Environmental study, also included in the tables, utilized the best methods which could be devised for characterizing Lower Manhattan.

Whether addressed through a CERCLA action or any other means, Lower Manhattan has not undergone adequate testing. Within EPA itself, we do not have the expertise to design or carry out state-of-the-art testing protocols for asbestos. For other hazardous substances, we do have expertise, but not for asbestos. The experts I know of at this present time include the researchers responsible for the Ground Zero Task Force study (Eric Chatfield and John Kominsky), the researchers for the HP Environmental study (Hugh Granger, Thomas McKee, James Millette, Piotr Chmielinski, and George Pineda), and Michael Beard of Research Triangle Institute.

4. summary, asbestos risk assessment for wtc dusts

My December 19, 2001 memo[30] provided a detailed rationale for projecting cancer and asbestosis risks from WTC fallout by calculating exposures from the very limited data which is currently available. In that assessment, various exposure scenarios were hypothesized, and risks of lung cancer for smokers and non-smokers, mesothelioma (a cancer of the chest cavity), and asbestos risks were hypothesized. As stated at the beginning of this memorandum, I believe that initiating such an effort fills a critical need that was thwarted in the appropriate EPA offices by the constant reassurance of high level EPA officials that no such assessment was necessary.

PCM-equivalent Correction Factor and Other Changes to Risks in December 19 Memo

My December 19 risk assessment used the concentration of all asbestos fibers, not just ``PCM-equivalent'' fibers (those longer than 5 m, width greater than 0.25 m, and an aspect ration greater than or equal to 3 to 1) in making calculations of risk. An explanation was provided as to why this correction was not made, along with providing a range of 80 to 90 percent non-PCM-equivalent fibers for WTC asbestos if such a correction were to be used. This was based on two studies: From the Ground Zero Task Force study,[31] the PCM-equivalent fibers ranged from 1.3 to 20 percent of total asbestos fibers/bundles for 8 different samples of settled dusts, with a mean of 8.7 percent. For the HP Environmental study,[32] for 3 air samples, PCM-equivalent fibers ranged from 3.1 percent to 6.5 percent, with a mean of 5.6 percent. Because of the uncertainty from such limited data, if any conversion were to be made at this time for WTC fallout, then 20 percent of the total asbestos should be assumed to be PCM-equivalent.

No correction should be made for PCM-equivalents to asbestosis risks that were projected in the December 19 memo. This is because the ATSDR reviewed studies showing that asbestosis is associated with shorter asbestosis fibers.[33] In addition, it would probably be appropriate to use an uncertainty factor of 1,000 for asbestos risks, according to CERCLA guidelines,[34] so that the risks I had previously projected in the December 19 memo for asbestosis would be 1,000 times higher.

No correction should be made for the type of asbestos, chrysotile vs. amphibole vs. amosite, etc. This is because EPA does not recognize any difference in toxicity for the purpose of making risk assessments.[35]

Cancer risk level constituting an imminent and substantial endangerment to Public health pursuant to Superfund

The EPA generally considers an upper-bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} as a safe range. A risk of 1074 represents a probability that there may be one extra cancer case in a population of 10,000 (1 per 10,000). A 10^{-6} risk is the probability that there may be one extra cancer case in a population of one million people over a lifetime of exposure (1 per 1,000,000. The National Contingency Plan (NCP) (Superfund) requires that the 10^{-6} risk level should be the point of departure; the goal in any response by the EPA to ameliorate exposures to carcinogens from man-made sources. A response action is generally warranted if the cumulative excess carcinogenic risk for any single individual affected by a site exposing humans to carcinogens exceeds 1 in 10,000 (the 10^{-4} risk level) using reasonable maximum exposure assumptions for either the current or reasonably anticipated future exposures.[36]

Cancer risks for Libby compared to Lower Manhattan

The December 20, 2001 risk assessment[37] prepared by Dr. Weis of EPA's Carcinogen Assessment Group (CAG) found that for maximum concentrations of asbestos exposures to Libby residents through breathing suspended dusts inside residences, the cancer risk was between 1 in 1,000 to 1 in 100. This cancer risk exceeded the threshold of 1 in 10,000 necessary to be considered an endangerment to public health.

My December 19, 2001 preliminary risk assessment, based on much more limited data, projected maximum risks as high as 1 in 1000, to cancer risks of 1 in 10 for a persons either living apartments and/or working in buildings that retained much of the asbestos in carpeting, ducts, furniture, and draperies. If a correction factor for PCM-equivalents of 20 percent is applied to these projections, the risks range from 2 in 10,000, to risks of 2 in 100. For a laborer spending only 3 months cleaning out buildings in Lower Manhattan without proper protection, cancer risks of 1 in 5 were projected, which would be 4 in 100 if a correction for PCM-equivalents was applied. Other possible exposure scenarios were evaluated as part of my December 19 memorandum.

Risks could be much higher if there were also exposures to fiberglass, fine particulate matter, and other toxic substances at the same time. There are wide ranges of uncertainty in these calculated risks, because only limited data was available. However, I believe that these calculations establish the need for a more rigorous evaluation of risks.

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Tables.--Lower Manhattan Asbestos Data

Settled Asbestos Dusts, Building Interiors Manhattan.--Fibers and Bundles (Structures) Longer than 5 Micrometers	PCM-equipment structures per square centimeter (s/cm^2)
Ground Zero Task Force Study,[38] data from Table 21. High Exposure Building, Before Cleanup, 250 South End Ave. Fibers and bundles longer than 5 micrometers. Heavy visible dust layer, could still read addresses on envelopes on table and see the lines on a yellow legal pad on the table. Windows had been blown out from some apartments. [Note Table 21 says fibers/cm^2, but title of table is ``fibers plus bundles'', which equals structures.] TEM analysis using American Society for Testing and Materials ASTM D6480-99.	
250SEA-10D-D1 (A) (sample collected with toothbrush sample) top of cupboard with glass doors.....	21,000
250SEA-10D-D1 (B) (wipe sample) top of cupboard with glass doors.....	19,000
250SEA-10D-D2 (A) (sample collected with toothbrush) living room high boy side table.....	18,000
250SEA-10D-D2 (B) (sample collected with toothbrush) living room high boy side table.....	28,000
Ground Zero Task Force Study,[39] data from Table 19. Low Exposure Building, Before Cleanup, 45 Warren St., dust layer visible on dark table, grain of wood still visible. 5 blocks from Ground Zero, building faced north away from Ground Zero. Only light dusting. See photo in study itself. Fibers and bundles longer than 5 micrometers. [Note Table 19 says fibers/cm^2, but title of table is ``fibers plus bundles'', which equals structures] TEM analysis using American Society for Testing and Materials ASTM D6480-99.	
45WAR-2-D1, 2nd floor, living room table near window, wipe sample.....	2,300
45WAR-2-D2, 2nd floor, living room window sill, wipe sample.....	60,000
45-WAR-5-D1, 5th floor, living room, window sill, wipe sample.....	79,000
45-WAR-5-D2, 5th floor, roof level office, green wooden chair, wipe sample.....	22,000
NY Environmental Law and Justice Project, 105 Duane St., after cleanup.[40] Microvacuum method followed by American Society for Testing and Materials ASTM D-5755:	
Sample inside central air conditioning duct. Total asbestos concentration reported as 555,000 s/cm^2. Estimated that 20 percent of the structures are over	111,000

5 micrometers, or 111,000 s/cm^2.....

Note: The total asbestos levels found in Manhattan by the Ground Zero Task Force study are much higher. The reason why only the ``PCM-equivalent'' asbestos levels are given in the tables below is to make comparison with the Libby data possible. See the explanation at the beginning of this memo.

Thick WTC Fallout Dust Deposits Outdoors Manhattan.-- Includes all asbestos, not just fibers longer than 5 micrometers	Weight percent (%) (all asbestos included, not just PCM-equivalent asbestos)
Ground Zero Task Force Study,[41] data from Table 22. Analyses by gravimetric matrix reduction (American Society for Testing and Materials ASTM STP 1342) followed by PLM analyses of larger fractions and TEM measurement of fine portion of samples.	
Roof of automobile, Church St. south of Duane St.....	0.67
45 Warren St., roof, outside 5th floor loft, gaps in stone floor.....	1.05
250 South End Ave., Apartment 11D, exterior window ledge.....	2.25
250 South End Ave., ground level courtyard, top of wall.....	2.05
HP Environmental Study, Table 5.[42] PLM analyses:	
No. 1--Barkley St. west of Church.....	<0.25
No. 2--Barkley St. between Broadway and Church.....	ND
No. 3--Barkely and Greenwich.....	ND
No. 4--Barkey between Greenwich and Joe Dimaggio Hwy.	ND
No. 5--Barkey at Joe Dimaggio Hwy.....	0.5
No. 6--Warren and Church.....	<0.25
No. 7--Murray near Broadway.....	0.75
No. 8--Murray and Greenwich.....	ND
No. 9--Chambers between Broadway and Greenwich.....	ND
No. 10--Murray between Greenwich and Joe Dimaggio....	0.75
No. 11--Warren between Greenwich and Joe Dimaggio....	0.75
EPA data on bulk dusts taken outside buildings in Manhattan[43] All the analyses performed EPA for Manhattan used the less sensitive PLM method. EPA did not fraction the sample and use electron microscopy techniques in addition to PLM as did the Ground Zero Task Force study above. EPA in its risk assessment for Libby, however, noted that soil samples showing non-detectable asbestos by PLM alone actually had high levels when analyzed by scanning electron microscope (SEM) methods.[44]	

48 of 177 dust samples.....	1-4.46
129 dust samples.....	ND

Airborne Asbestos, Building Interiors Manhattan.--PCM-equivalent fibers and bundles longer than 5 Micrometers	PCM-equivalent fibers per milliliter (f/mL)
Ground Zero Task Force Study:[45] data from Table 16. High Exposure Building, 250 South End Ave, before cleanup, passive conditions (no activities to disturb dusts). Fibers and bundles longer than 5 micrometers. TEM analysis using the International Standards Organization ISO10312 direct transfer method	
250SEA-10D-A1, Apartment 10D, den.....	0.063
250SEA-10D-A2, Apartment 10D, den.....	0.060
250SEA-10D-A3, Apartment 10D, living room.....	0.048
250SEA-10D-A4, Apartment 10D, living room.....	0.075
250SEA-10D-A5, Apartment 10D, bedroom.....	0.081
Ground Zero Task Force Study: Table 8.[46] PCM-equivalent fibers and bundles longer than 5 micrometers. Passive Conditions (no activities to disturb dusts) low exposure Building, 45 Warren St. before cleanup. TEM analysis using the ISO10312 direct transfer method.	
45 WAR-2-A1, 2nd floor living room.....	``not statistically significant'' [detected but uncertain]
45 WAR-2-A2, 2nd floor living room.....	ND
45 WAR-2-A3, 2nd floor master bedroom.....	0.010
HP Environmental Study: Table 6.[47] Two building interiors near Ground Zero. Passive conditions, before cleanup. Analyses by the modified EPA Level II TEM method where samples were heavily loaded (all 3 samples below where asbestos detected), which uses indirect preparation to separate out interferences from other non-asbestos parts of WTC dusts. Study demonstrated that up to 10 times more asbestos was detectable by this method.	
Sample 2.....	0.007
Sample 7.....	0.167
Sample 9.....	0.346
8 out of 11 samples, interior of 2 buildings near collapsed WTC towers.....	ND
EPA data: Passive conditions, after incomplete	usually not

cleanup. EPA has been using the simple AHERA TEM clearance test method inside buildings at the request of tenants and others. This is a violation of the AHERA protocols, which only allow this test to be performed after professional and complete asbestos abatement, which must thoroughly clean all surfaces. The AHERA TEM clearance method is only meant as an inexpensive, but not an assurance by itself, that asbestos has been adequately abated. The use of a leaf blower or other strong fan in conjunction with taking the air sample would be needed for that in addition to wipe samples of surfaces. EPA Region 8 found that at Libby, even when there were activities going on to disturb dusts, air monitors worn by people sitting on couches, etc. always gave higher readings than a stationary air monitor in the same room (such as is the case in the AHERA TEM test).....	detected

Tables.--Libby Asbestos Data

Settled Asbestos Dusts, Building Interiors Libby.--Fibers and Bundles (Structures) Longer than 5 micrometers (m)	PCM-equivalent structures per square centimeter (s/cm^2)
EPA Region 8 data[48] Microvacuum sampling by American Society for Testing and Materials ASTM D-5755 with analyses by TEM and counting rules specified in International Standards Organization ISO 10312.	
33 out of 261 samples (13 percent) that had detectable asbestos.....	20-3658
228 out of 261 samples (87 percent) had non-detectable asbestos.....	ND

Residential and Garden Soils Libby.--Includes all asbestos, not just fibers longer than 5 micrometers	Weight percent (%) (all asbestos included, not just PCM-equivalent asbestos)
EPA Region 8 data:[49] Analysis by PLM. EPA found that for those Libby samples with non-detectable analysis by PLM, many were found to actually have high levels when scanning electron microscope (SEM) methods were used.	
Yard soil, 13 of 258 (5 percent) samples had detectable asbestos.....	1-5 percent
Yard soil, 106 of 258 (41 percent) samples had a	trace

trace asbestos.....	
Yard soil, 139 of 258 (54 percent) had non-detectable asbestos.....	ND
Garden soil, 43 of 109 (39 percent) had detectable asbestos.....	1-5
Garden soil, 59 of 109 (54 percent) had a trace asbestos.....	trace
Garden soil, 43 of 109 (39 percent) had non-detectable asbestos.....	ND
Driveway, 21 of 263 (8 percent) had detectable asbestos.....	1
Driveway, 141 of 263 (54 percent) had a trace asbestos.....	trace
Driveway, 101 of 263 (38 percent) had non-detectable asbestos.....	ND

Airborne Asbestos, Building Interiors Libby.--PCM-equipment fibers and bundles longer than 5 Micrometers	PCM-equipment MEAN fibers per milliliter f/mL	PCM-equipment RANGE fibers per milliliter f/mL
EPA Region 8 data:[50] Routine and Active Occupancy. Analyses by TEM.		
Routine activities, personal air monitor, 2 of 5 (40 percent) samples had detectable asbestos..	0.35	0.023-0.048
Routine activities, personal air monitor, 3 of 5 (60 percent) samples had non-detectable asbestos.....	.....	.....
Routine activities, remote stationary air monitor, 4 of 10 (40 percent) samples had detectable asbestos.....	0.009	0.0003-0.036
Routine activities, remote stationary air monitor, 6 of 10 (60 percent) samples had non-detectable asbestos.....	ND	ND
Active cleaning activities, personal air monitor, 6 of 26 (23 percent) samples had detectable asbestos.....	0.010	0.004-0.013
Active cleaning activities, personal air monitor, 20 of 26 (77 percent) samples had non-detectable asbestos.....	ND	ND
Active cleaning activities, remote stationary air monitor, 3 of 17 (18 percent) samples had detectable asbestos.....	0.008	0.007-0.010

Active cleaning activities, remote stationary air monitor, 14 of 17 (82 percent) samples had non-detectable asbestos.....	ND	ND

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> ``Asbestos in Bulk Dust If a substance contains 1 percent or more asbestos, it is considered to be an ``asbestos-containing material.'' EPA is using the 1 percent definition in evaluating dust samples from in and around Ground Zero and other areas potentially impacted by the World Trade Center collapse. The majority of areas in which EPA has found levels of asbestos in dust above 1 percent are in the vicinity of the World Trade Center work zone. Daily summaries of this data and how it compares to the level of concern for public health are also available.''

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``If dust or debris from the World Trade Center site has entered homes, schools or businesses, it should be cleaned thoroughly and properly following the recommendations of the New York City Department of Health.''

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Statement of Kerry Kelly, M.D., Chief Medical Officer, New York City Fire Department

Good morning and thank you for inviting me to appear before this subcommittee. I am the chief medical officer of the New York City Fire Department. I responded to the World Trade Center at 9:30 a.m. on September 11th, and participated in the rescue and recovery efforts that thousands of our members undertook on that day and in the days that followed.

The FDNY response to the WTC event placed our members at the epicenter within moments of the first plane hitting the North Tower. Members from emergency squads, rescue companies, engines, ladders and medical teams from across the city responded to the call. Firefighters about to end their daily tour of duty stayed on; off-duty firefighters commandeered vehicles; retirees and members on sick leave found their way to the scene. Within a matter of minutes, these rescuers became victims, soldiers in the worst terrorist attack on our Nation's soil.

Three hundred and forty-three members lost their lives that day. Over 200 members were seen in emergency rooms for physical trauma. Many members required hospitalization and surgical intervention for significant orthopedic injuries. The rescue and recovery effort involved hundreds of members, following a job-wide recall during the first few days of the operation.

In the initial moments and hours after the collapses, firefighters and emergency workers continued to work without pause in the desperate search for survivors. The air was full of thick debris and dense dust clouds, and visibility was so bad that one could not see people more than three feet away. With the collapse of the towers, an avalanche of acrid debris, metallic meteors and a shower of gray dust descended on the survivors, blanketing the new wave of rescuers as they rushed in to assist. It seemed as though day had turned to night, but still our members continued searching for survivors in a surreal black blizzard of debris. Fine dust coated every crevice, making features indiscernible. Debris and dust choked breath and irritated eyes.

Due to the vast numbers of FDNY personnel at the scene, respirators were not available for all members working at the site. Many also found it more difficult to operate while wearing respirators, and many chose to carry on their search for survivors unprotected.

Members ignored or fought against symptoms, and many did not sleep for days, pushing themselves to continue the search for survivors. In

the immediate aftermath of the collapse, as the rescue work began, many members complained of eye irritation, as well as cough and congestion. As the air quality improved, eye irritation symptoms improved, but cough complaints continued. Pulmocort inhalers, an inhaled steroid, were offered to offset the allergic cough symptoms.

Concerns for the physical and mental health of members were raised by FDNY medical staff in those first few hours and days. Due to the cough symptoms that members exhibited, questions were also raised about the exposure levels that were present at the scene. It was, and still is, unclear what exposures members might have experienced following the fall of two 110-story towers combined with the combustion of two planes and jet fuel.

Within a week of the tragedy, the Fire Department's Bureau of Health Services (BHS) began preparing for an unparalleled medical monitoring procedure for all members exposed at the site. BHS partnered with National Institute for Occupational Safety and Health (NIOSH) and the U.S. Centers for Disease Control and Prevention (CDC) on this project. We are very grateful for the funding we received from CDC to conduct this initial analysis of our members. From October 6-12, an initial sampling of 400 exposed members were given a comprehensive medical evaluation. BHS, NIOSH and CDC were satisfied with the logistics and implementation of the medical evaluation, and BHS immediately began the vast project of testing the remaining members.

We worked 7 days a week, with three shifts a day, and were able to evaluate approximately 180 members per day. From October 31 until January 31, the medical monitoring of all personnel who responded to the WTC was undertaken. Almost 10,000 firefighters and 800 EMS personnel have now been evaluated. I am proud to say that our initial medical evaluation of all the members who responded to the World Trade Center is now complete.

Medical monitoring consisted of ECGs, pulmonary function tests, chest x-rays, hearing evaluations, and blood testing consisting of cbcs, chemistries, liver functions, lipid profile, lead, beryllium, pcbs and urine mercury and urinalysis testing. In addition, testing of dioxins and hydrocarbons was done at the CDC lab on the initial group of 400. Blood from all remaining members was banked, to be tested at a later time if the need arises. Although some of these tests are part of routine medical examinations, other more specialized testing was also conducted due to environmental concerns.

At the time of the medical monitoring members also completed a computerized survey regarding their physical complaints to assist the Department in tracking the symptoms that members are experiencing. BHS has compiled a very complete record of each of our members from prior annual exams to use as a baseline for comparison.

Since the testing was completed less than 2 weeks ago, the complete results from this computer survey are still being tallied. Preliminary blood tests have not indicated any significantly elevated levels of toxic metals or abnormal chemistries or blood counts. At the time of completing the computer survey, 25 percent of our members reported cough and shortness of breath on exertion. The pulmonary function tests taken during the medical evaluation have shown a decline that matches this complaint. In most cases, this change has not affected overall functional capacity. Some members remain ``off the line'' with active symptoms, while others have returned to work. Our current medical leave rate is a reflection of both the rise in respiratory symptoms and post-traumatic stress. There has been a two-fold increase in both respiratory problems and stress related problems in the last 5 months.

It remains to be seen how members will recover from this event.

However, in order to measure recovery, we must continue to monitor all of the members who responded to the WTC event. We are grateful to have received funding from CDC for one additional medical examination per member in the future. We remain concerned about potential health problems in the future. We are also concerned about longitudinal follow up with our members. Those who become ill, or experience a trauma of this level in their working life, may choose to retire from this job when they can no longer withstand the rigors of this work. We want to ensure that our members continue to receive monitoring in the future, whether or not they retire from the Department. For this reason, the Fire Department's Bureau of Health Services is now actively seeking funding for this project.

We must affirm our commitment to the members of our Department who gave so much to this city and this country, and who have inspired people around the world with their courage and determination. We owe it to them continue to monitor the effects that their exposure on September 11th will have on their future. BHS has the pre- and post-WTC records, the expertise and the logistical set-up to conduct an unprecedented and thorough investigation of the effects of the exposure our members experienced on that terrible day. Let's not forget that more of our members experienced a far greater level of exposure than any other group in this city.

As far as I know, there are no hard-and-fast answers to the potential effects of exposures. Many unknowns remain. That is why it is critical that we continue our monitoring.

The events of September 11th were catastrophic. In a matter of moments, our members became participants in a battlefield. The FDNY response was outstanding when we review the numbers of civilians saved and we measure the heroic efforts of so many individuals. Our losses are deep felt with the deaths of members from every rank and every branch of our service. Our memories are filled with the experiences of that day and the many days that followed. Both physically and emotionally, we have been challenged by this event. As we rebuild our Department, we must also restate our commitment to our members who worked so hard to save others. I am sure we can all agree it is no less than they deserve.

Thank you for your time.

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Statement of George D. Thurston, Sc.D., Associate Professor of Environmental Medicine, New York University School of Medicine

Thank you for holding this hearing, and for giving me this opportunity to contribute to the process of examining the environmental consequences of the attacks of September 11th.

I am George D. Thurston, a tenured associate professor of Environmental Medicine at the New York University (NYU) School of Medicine. My scientific research involves investigations of the human health effects of air pollution.

I am also the director of the National Institute of Environmental Health Sciences' (NIEHS) Community Outreach and Education Program at the NYU Department of Environmental Medicine. A goal of this outreach program is to provide an impartial scientific resource on environmental health issues to the public and to decisionmakers, and this is my purpose in testifying to you here today.

In the aftermath of the attack of September 11th and the subsequent anthrax bio-terrorism, we have come to realize that terrorism is more than a security threat: it can also represent an environmental health

threat. On September 12, my research center received an urgent request from the Office of the Director of the NIEHS, one of the National Institutes of Health, to respond to environmental impacts of the attack of September 11th by doing whatever we could to monitor the air pollution that was resulting from the disaster's dust and fires, and to assess its environmental health consequences. That very evening, we sent a research team into the World Trade Center Disaster Zone to collect numerous samples of the dust from locations surrounding Ground Zero. Figure 1 shows a map of the locations where we collected settled WTC dust samples on the evening of the 12th and on the 13th of September.

Our NYU Medical School research team also set up an ambient air monitoring station at the NYU Downtown Hospital at Beekman Street, just 5 blocks to the east-northeast of Ground Zero. We sampled for various types of particle air pollution: ultrafines, soot, fine particles, and inhalable particles from Friday, September 14 until the end of 2001, when the fires had been extinguished. Although our work is far from complete, we have weighed these samples to determine the ambient particulate mass concentrations, as well as analyzed the ambient air pollution samples and the WTC dust for their constituents. Our sampling data, therefore, applies to the general public living and working in the vicinity of the disaster, rather than to exposures at Ground Zero. So my testimony today focuses only on those community exposures and possible health effects among the general population in the downtown Manhattan area of New York City.

[GRAPHICS NOT AVAILABLE IN TIFF FORMAT]

It is of interest to note that the NYU Downtown Hospital was founded many years ago after an earlier terrorist bomber attack on Wall Street on September 16, 1920 that killed dozens of New Yorkers, and it was felt that downtown New York City needed a local hospital ready to respond to such emergencies. Some 81 years later, when this city needed it, the NYU Downtown Hospital was ready, and met that need. Moreover, despite having to run on diesel power and being in an emergency status, the hospital aided our environmental assessment efforts by providing us with space and power on its second floor, where we could run our sampling lines out to sample pollution in the ambient air.

Our analyses of the WTC dust samples revealed that some 99 percent of the dust was as particles too large to be breathed deeply into the lung, being largely caught in the nose, mouth and throat when inhaled. This large dust, however, contained approximately one-third fiberglass, with much of the remainder as alkaline cement dust. This large dust was, therefore, quite caustic and irritating to the eyes, nose and throat, consistent with the now famous ``World Trade Center cough'' that nearby residents reported. Only trace amounts of asbestos were found in our samples. The less than one percent that was as PM2.5, or the particles that would reach deepest in the lung, was found to have a neutral pH, with no detectable asbestos or fiberglass. Thus, while our analyses are consistent with the Government's conclusion that the WTC dust is not likely to have short- or long-term serious health impacts on otherwise healthy local residents, we found that it is very irritating and capable of causing

the symptoms reported by many residents.

[GRAPHICS NOT AVAILABLE IN TIFF FORMAT]

Our sampling of the ambient air pollution at NYU Downtown Hospital showed that air pollution levels were quite high in the first weeks following the attack, especially at night, but then diminished as the fires were brought under control. By early October, soot levels in the downtown area were generally similar to those that we measured at the NYU Medical School in Midtown (at First Ave. and 26th St.), although levels occasionally climbed in downtown on clear, calm nights throughout the fall. In Figure 3, the solid line on the left shows the declining trend in soot levels in September through December. Overall, our independent air pollution sampling results were largely consistent with the data reported by the U.S. EPA. In particular, although short-term peaks in PM2.5 particulate matter air pollution for a few hours did occur at night, the 24-hour averages were of PM2.5 were within the legal limits set by the U.S. air quality standards.

[GRAPHICS NOT AVAILABLE IN TIFF FORMAT]

Despite the fact that individual pollutants in the community were apparently at safe levels for otherwise healthy persons in the general population, this does not mean that no effects might have been experienced by especially susceptible individuals, such as infants or persons with pre-existing respiratory disease. In addition, it is impossible to know what potential interactive effects might have occurred among the various pollutants, even at these low levels. Ultimately, only epidemiological follow-up studies of possible effects among especially susceptible individuals will provide a fuller determination of the issue of possible health effects from the various pollutants in the WTC plume.

Finally, I feel strongly that we must make sure to learn all the lessons that we can from this horrible catastrophe regarding the communication of risk to the public in such emergency situations. Something like what happened to New York City on September 11th could, unfortunately happen again, and we must be prepared. It is an understatement to say that the public is skeptical of government pronouncements of safety in such situations. In this case, I feel that the EPA was too quick to declare the air ``safe'', and did not well enough define what was meant by that term. Although the fine particle pollution was not of a level that would make otherwise healthy people very sick, the dust was caustic and irritating, causing many to have severe and upsetting symptoms, including eye, nose, and throat irritation. This caused people to further doubt governmental pronouncements of safety, even after more complete data were available confirming the EPA position. As a result, the press turned to the academic research community of New York City to fill the void. Fortunately, New York City is itself blessed with vast resources,

including a host of some of the finest educational and research institutions in the world. Other locales may not have such local resources as were available in New York City, and be less able to meet such a disaster.

It has been my duty and honor to play a role in the academic effort to answer the environmental questions that New Yorkers had, and still have. But we must improve the current situation. While we cannot create governmental trust where there is none, I believe that we should draw from what happened in New York City to help the Nation better cope with such situations in the future. The Government should designate a suite of environmental parameters to be measured in such situations, and designate the appropriate health standards most appropriate for comparison in such short-term exposure situations. Moreover, I recommend that we create a mechanism by which blue-ribbon panels of the leading independent experts in the United States are formed in advance, perhaps by the National Academy of Sciences, to be on stand-by in case, God forbid, such an emergency occurs again. If this is done, there would then be an independent expert panel ready to be assembled, briefed, and to then give their quick-turnaround assessment of the public's environmental risks, and of the appropriate actions that are needed to protect public health. Without such a new mechanisms, I fear that any future such disasters may be accompanied by the same unfortunate confusion, doubts, and distrust. Let us act now to help preclude this risk communication problem in the future.

Thank you for the opportunity to testify on this important issue.

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Responses by George Thurston to Additional Questions from Senator Clinton

Question 1. In your testimony, you were critical of EPA's use of the term ``safe''. This gets directly to the issue of risk communication. How can government entities improve methods of risk communication?

Response. The specifics of risk communication are going to vary from situation to situation, but a basic principle that I see as important is to define carefully what is meant in statements to the public, and to explicitly state the limitations on what is being said. The public wants to be informed of what is known and what is not known, as well as what are the most important factors for them to consider, so that they can take the most appropriate individual actions to protect themselves and their families. For example, when I have discussed the risks associated with particulate matter exposures in Lower Manhattan after September 11th, I have always tried to separate out the exposures experienced by workers at Ground Zero as opposed to the public that is located blocks away. I have also tried to always include a differentiation between the effects of short-term pollution exposures (of hours or days) versus those of long-term exposures (of months or years). Making these kinds of careful distinctions, rather than broad-brush generalities or reassurances, reduces the chances of potential misunderstandings among the public, and thereby is more likely to better maintain confidence in these more careful and qualified risk communication pronouncements.

Question 2. I agree with your call for parameters. Can you comment further on this--how should we proceed with this effort?

Response. There is a need to come up with exposure limitation guidelines for pollutant exposures from shorter-term exposures in such disaster situations, as opposed to the existing exposure limitation

guidelines that are more often designed primarily to protect against more routine situations with longer duration exposures in the case of non-community (i.e., uncommon) pollutants, such as those pollutants more usually found in occupational settings. A critical feature of this guideline-setting process will be external review by scientists and the public outside the Government. Such peer review is generally a part of the routine standard setting process, but given the emergency situation faced by the governmental agencies involved in this disaster, they did the best they could with what was available. But we must be better prepared with more directly applicable guidelines in the future, should such a horrible disaster ever occur again. A case in point was the exposure limit set by the U.S. EPA for short-term asbestos exposures. While the standard for acceptable limits in the air for short-term exposure applied by the EPA in this emergency situation may yet in the long-run be deemed as the most appropriate, there was no time for external peer review of the guideline applied in the days and weeks following the disaster, so this gave the impression to some that the guideline used by the EPA was potentially arbitrary, rather than on a solid scientific health-based footing. This doubt undermined trust by those individuals in the EPA pronouncements regarding the health implications of the ambient asbestos exposures they were measuring and reporting. This uncertainty and resultant mistrust must be addressed as soon as possible by conducting independent and public peer review of a new set of guidelines for acceptable vs. unacceptable pollutant exposure limits in disaster situations.

Question 3. Do appropriate health standards exist for short-term exposure situations, such as those experienced by many at the World Trade Center? Do such standards need to be developed? Should they be developed?

Response. As I noted above, health-based guidelines for acceptable vs. unacceptable exposures in such shorter-term exposures are not available for all pollutants, especially for those pollutants that are usually of greatest health concern from long-term exposure, and that are not usually experienced in such an acute manner by the general public. For these pollutants, the appropriate agencies, such as the U.S. EPA, must develop a set of best science health-based guidelines that have undergone the usual scientific and public peer-review process, so as to avoid the kind of uncertainty that was faced by these agencies and the public in the wake of September 11th.

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Statement of Eric Goldstein, Natural Resources Defense Council

Good morning Chairman Lieberman, Senator Clinton and members of the Subcommittee, my name is Eric A. Goldstein and I am the director of the New York Urban Program at the Natural Resources Defense Council, Inc. (``NRDC''). NRDC, as you know, is a national, non-profit legal and scientific organization active on a wide range of environmental issues, including urban air quality. Since shortly after its founding in 1970, NRDC has placed a special focus on the New York region's environment and the quality of life of city residents. We are especially grateful to you for convening this hearing and for your continuing interest and dedication to safeguarding air quality and environmental health in New York.

In the aftermath of the September 11th tragedy, my NRDC colleagues Megan Nordgren, Mark Izeman and I began collecting data and conducting interviews as part of year-long study of the environmental impacts of the World Trade Center attacks and government's response to the

problems identified. We are releasing a preliminary version of that study this coming Wednesday, and would ask you to consider incorporating this full document into the hearing record. This morning, I will briefly make three points and propose four recommendations for action by this subcommittee to help address air quality problems in the wake of the Trade Center disaster.

First, it is important to state what is widely known to anyone who lives or works in the vicinity of Ground Zero--the September 11th attacks, in addition to the horrific loss of human lives and huge economic dislocations, constituted an unprecedented assault on Lower Manhattan's environment. The collapse of the 110 story towers, the conflagration of vast amounts of toxic materials, the forceful distribution of debris and dust, and the long-burning fires at Ground Zero combined to create what was unquestionably the single largest air pollution episode in the history of New York City. NRDC's report estimates that at least 10,000 New Yorkers suffered short-term respiratory and other pollution-related impacts from the Trade Center's collapse and subsequent fires. Thousands of apartments and offices in the immediate vicinity of Ground Zero received significant loadings of polluted dust--everything from asbestos to fiberglass to pulverized cement to, in many cases, metals and other toxic substances.

There is, of course, much we do not yet know about the air quality impacts from the September 11th attacks. That is why the health studies now being undertaken by distinguished medical institutions like Columbia University's Mailman School of Public Health and Mt. Sinai's Selikoff Center for Occupational and Environmental Medicine, as well as similar work at New York University's Nelson Institute of Environmental Medicine, is so important.

But here in most condensed fashion is what we can say about air quality right now. In general, outdoor air quality in Lower Manhattan today is approaching or similar to levels in this area prior to September 11th, with the exception of the Ground Zero work-pile and localized hot spots, such as areas with heavy concentrations of diesel equipment or vehicles and, at times, areas where Trade Center debris is being moved or transferred to barges. The most worrisome air pollution problem facing Lower Manhattan now involves indoor pollution threats in some residences and offices that were engulfed with thick layers of contaminated dust and whose buildings were not properly cleaned.

In short, from what we now know, the bulk of the exposures have already occurred and the bulk of damage from the terrorist attacks has been felt. The air pollution challenges that remain are manageable and solvable. But, they exist and they shouldn't be swept under the rug.

Let me briefly turn to government's response to the environmental health challenge presented by the September 11th attacks. In many ways, the response of government agencies and their employees to the Trade Center attacks was heroic and a testament to the merits of public service, which is too often undervalued. Environmental and Health Agency staff performed many tasks with distinction. U.S. Environmental Protection Agency personnel, for example, undertook numerous assignments including the removal of hazardous waste from the Ground Zero site, the deployment of HEPA vacuuming trucks for collection of dust layers from city streets, and the establishment of sophisticated air monitoring and testing facilities. But when one closely examines the governmental response to air pollution impacts from the collapse of the Trade Center Towers and the subsequent fires, a more complicated picture emerges.

One major problem was overlapping jurisdiction among at least nine

city, State, and Federal agencies, which meant that no single agency was in overall charge of the environmental aspects of the response to the September 11th attacks in New York. For example, no agency took the lead in insuring environmental safety for those working at Ground Zero. No agency took affirmative charge of the environmental clean up and inspection of environmental conditions prior to re-occupancy of residences and office buildings that were coated with debris and pollution. Many such problems, NRDC believes, resulted from shortcomings by the Giuliani administration, which handled so many other aspects of the September 11th response magnificently and which was in tight, overall command of the entire rescue, recovery and clean-up effort. The low profile of the City's Department of Environmental Protection--the 6,000 person department with wide-ranging New York City Charter duties to respond to environmental emergencies--lends support to the growing belief the department, for whatever reason, did not rise to the challenges posed by the September 11th attacks.

A second major problem involved communicating environmental health information to the public. There appeared to be no coordinated strategy for conveying such information to concerned citizens, no regular briefings by governmental leaders of environmental or health agencies, and no one place for citizens to turn for environmental guidance and advice. Moreover, government statements on air quality, at least as the public understood them, stressed the good news and de-emphasized issues that might raise further concerns. By focusing almost exclusively on long-term risks in their public statements, government officials omitted warnings regarding short-term health effects, particularly to Ground Zero workers and other sensitive sub-groups. Admittedly, government agencies had a very difficult assignment here, and were responding not to an industrial accident but an unprecedented act of war. Nevertheless, as a result of shortcomings on the communication front, a troubling credibility gap on environmental health issues emerged.

A third difficulty, and one of continuing concern, has been environmental safety shortcomings at Ground Zero. While the rescue, recovery and site clean-up operations have made remarkable progress under exceptionally challenging circumstances, the way environmental health issues have been handled represents a glaring exception to this post-September 11th record of accomplishment. A prime example has been the failure to require Ground Zero workers to wear appropriate respirators. The OSHA representatives--who will be speaking later and who will probably state that they were only at Ground Zero in an advisory capacity and did not or could not insist upon the wearing of respirators by the Ground Zero work force--certainly have some explaining to do. Among other on-site safety problems of significance were undue delays in establishing worker safety training procedures.

A final shortcoming in government's environmental response to the Trade Center attacks involves problems assisting Lower Manhattan residents on environmental safety and clean-up issues. In addition to the previously stated communications gaps, city agencies failed to provide complete and proper clean-up protocols to many Lower Manhattan residents and failed to inspect even the most heavily contaminated buildings for environmental safety, prior to re-entry. Once again, no agency took overall responsibility for supervising the environmental clean up and safe re-occupancy of apartments (and office buildings) immediately surrounding Ground Zero. It was left, for the most part, to residents and building managers to sort these complex challenges out for themselves.

Let me conclude by listing four of the recommendations contained in the forthcoming NRDC World Trade Center report, on which we believe this subcommittee could be most helpful:

(1) Urge the New York City Department of Environmental Protection and the U.S. Environmental Protection Agency (with whatever other agencies they deem appropriate) to: (a) create an Air Pollution Assistance Center located in the Ground Zero vicinity, fully staffed with a range of government personnel who could provide one-stop advice for local residents and office workers, and (b) create a Joint Task Force that will promptly begin door-to-door visits to and inspections of individual buildings, to verify environmental conditions, at least in the immediate ring of buildings within a 10-block radius of Ground Zero;

(2) Prod the Occupational Safety and Health Administration and relevant New York City officials to commence without further delay enforcement of environmental safety rules at the Ground Zero work site;

(3) Assist medical institutions, such as those listed above, in securing monies for public health studies, and help obtain funds for a full health registry of all Lower Manhattan residents and workers who may have been affected by pollution in the aftermath of September 11th, and

(4) Consider convening a second hearing this spring to review whether Federal Clean Air Act pollution standards and/or pollution monitoring requirements for New York need revision in the wake of lessons learned from the September 11th tragedy.

Thank you very much for inviting NRDC to testify at this important hearing. We stand ready to assist this subcommittee in addressing the air quality impacts of the World Trade Center disaster in any way we can.

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Statement of Marianne Jackson, Deputy Federal Coordinating Officer, Federal Emergency Management Agency

Good morning, Mr. Chairman and members of the subcommittee. I am Marianne Jackson, Deputy Federal Coordinating Officer for Federal Emergency Management Agency (FEMA) for the World Trade Center disaster. I thank you for this opportunity to update you on FEMA's disaster response operations in New York City, especially related to health concerns and clean up, since the World Trade Center attacks on September 11, 2001.

The events of September 11th have become indelibly etched in our collective memory because of the unthinkable and evil terrorist acts perpetrated against the citizens of this great nation. The twin towers at the World Trade Center complex collapsed and nearby buildings either partially collapsed or suffered extensive collateral damage. The sheer magnitude of this disaster caused untold suffering and generated thousands of tons of debris.

I appreciate being invited here today to give you an update on FEMA's continuing activities and the types of assistance we are providing, along with our partners, to help alleviate the suffering of the residents of New York City, to deal with the cleanup, and to monitor the potential health effects on the emergency responders. As you know, until you have seen the devastation in person, you can't even begin to appreciate the enormity of this disaster and the recovery that is involved. But I can assure you that tremendous work has already been accomplished.

The level of cooperation and professionalism exhibited by all of the Federal, State and local personnel and emergency responders has

been outstanding. I am especially moved and deeply humbled by the heroic and unselfish efforts of the many emergency responders from right here in New York City and of those who came in from around the Nation to assist in the response and recovery. These people placed themselves in harm's way to help others in their time of need and I am forever grateful to them for their ultimate sacrifice and bravery. Many of these policemen, firemen, and emergency medical technicians tragically lost their own lives while doing what they do best, putting everything aside to rush to the scene to save lives, rescue the trapped and injured, and be the first responders. We will never forget what they did and are committed to doing everything we possibly can to ensure that any potential health effects they may encounter are monitored and followed up. Just as they gave for us, we must in turn reach out and do whatever we can to help them.

Some 3,500 Federal workers were deployed to New York to support the disaster response, about 1,300 from FEMA, and almost 2,000 from other Federal departments and agencies. All of these responders are caring people working together toward a simple goal to help the victims recover from this terrible national tragedy. There are still 491 people working on the recovery in New York at the Disaster Field Office.

background

As background, I want to describe how FEMA works with other agencies in responding to disasters. As you know, our mission is to reduce the loss of life and property and protect our Nation's critical infrastructure from all types of hazards. Our success depends on our ability to organize and lead a community of local, State, and Federal agencies and volunteer organizations. Our experiences in responding to natural disasters have taught us who to bring to the table and what questions to ask so that we may facilitate managing a wide range of emergencies. We provide the management framework and the financial resources to help State and local governments meet the needs, of their communities.

The Federal Response Plan (FRP) forms the heart of that framework. The FRP lays out the process by which interagency groups work together in Washington, DC, and in all 10 FEMA Regions, to enable the Federal Government to respond as a cohesive team to a wide range of natural and manmade disasters and catastrophes. This team is made up of 26 Federal Departments and Agencies, as well as the American Red Cross, and is organized into interagency functions based on the authorities and expertise of the members and the needs of our counterparts at the State and local level.

Since 1992, and again in response to the tragic events on September 11, 2001, the Federal Response Plan has proven to be a solid framework time and time again for managing major disasters and emergencies regardless of cause. It works during all phases of disasters, including readiness, response, recovery and mitigation. The framework is successful because it builds upon the existing professional disciplines and relationships among the participating agencies. Among Federal agencies, FEMA has the strongest ties to the emergency management and fire service communities. We plan, train, exercise, and operate together to prepare for and respond to all types of hazards all of the time. That puts us in a position to manage and coordinate programs that address their needs. Similarly, the Department of Health and Human Services has the strongest ties to the public health and medical communities, and the Department of Justice has the strongest ties to the legal, law enforcement, and victims' assistance communities. The Federal Response Plan respects these relationships and areas of

expertise and relies upon them to define the decision-making processes and delivery systems so that we maximize the use of all available resources.

We received tremendous support from some our partners: transportation of assets and movement support provided by the Department of Transportation; telecommunications assistance from the National Communications System; logistical and managerial support provided by incident management teams from the U.S. Firefighting Service; mass care, feeding, and mental health support from the American Red Cross and other volunteer organizations; resource support from the General Services Administration; food stamp program support from the Department of Agriculture; assistance in resolving power restoration problems from the Department of Energy, a medical screening tool to assist in evaluating any potential medical outcome related to worksite exposure has been developed U.S. Army Corps of Engineers; invaluable support from the various branches of the Department of Defense; and extensive environmental monitoring and sampling support from the Environmental Protection Agency.

monitoring air quality

Immediately following the attacks on September 11th, the importance of air quality, emergency responder health, environmental degradation, and related issues emerged as critically important, in addition to responding to the immediate needs of the victims of the attacks. Right away we began working closely with the Environmental Protection Agency (EPA), the New York City Department of Environmental Protection and New York State Department of Environmental Conservation to monitor and address air quality concerns. Under the FRP we mission assigned and provided funding to EPA to conduct air sampling throughout Manhattan, Brooklyn and Staten Island. Air quality monitoring continues today with numerous monitoring sites providing data that can be used to evaluate health and safety standards. Our funding will permit this monitoring to continue through September 30, 2002.

ensuring appropriate safety and preventive measures

The health and safety of emergency responders is always a paramount concern of ours. Right after the attacks numerous Government Agencies such as the Occupational Safety and Health Administration (OSHA), National Institute for Occupational Safety and Health (NIOSH), within the Department of Health and Human Services (HHS), EPA, and State and city agencies dispatched representatives to the site to provide advice on health issues and establish appropriate safety measures and protocols. In fact, a comprehensive Health and Safety Plan was developed with input from numerous Federal, State, and New York City agencies. FEMA is a strong supporter of site safety. Our experience in disaster responses has taught us the importance of ensuring the safety of the emergency responders so that they do not themselves become disaster victims.

Federal personnel and teams deployed into the disaster area, such as the Urban Search and Rescue Teams, U.S. Army Corps of Engineers personnel, and medical personnel from the Department of Health and Human Services, arrived with the necessary protective gear and as a result of health and safety advisories that were issued were able to adopt the required safety protocols. In the first weeks, FEMA's Safety Officer closely coordinated with and participated daily in the New York City Interagency Health and Safety Meeting and, as a result, was able to pass on advisories and provide training from the meetings.

long-term health monitoring of first responders

We took measures to address immediate health concerns involving

emergency responders through our coordination with the Department of Health and Human Services and its Public Health Service. Five Disaster Medical Assistance Teams, four Disaster Mortuary Teams, one Veterinary Medical Assistance Team, and one Mental Health Assistance Team, were dispatched to New York City to provide health care and related assistance. The Naval Hospital Ship USNS Comfort and burn nurses were also deployed to support the response.

Long-term health monitoring was funded by FEMA for medical surveillance of 11,000 firefighters and 4,000 State emergency responders working at Ground Zero. As of December 31, 2001, blood samples had been drawn by local clinics coordinated by the FDNY Medical Office. These samples are being used to help establish a health baseline. Follow-up and additional testing is to be completed by the Center for Disease Control (CDC) over the next 12 months. We provided $9 million for immediate testing, analysis and program management with CDC as the lead agency.

In an effort to be cautious, we have asked the Urban Search and Rescue (US&R) Task Forces that deployed to the World Trade Center to notify us of any medical problems/illnesses resulting from or related to their deployment. We have encouraged them to use the Workman's Compensation Program as applicable and complete and provide us with copies of the Federal Employee's Notice of Traumatic Injury and Claims for Continuation of Pay/Compensation Form (Form CA-1).

A Centers for Disease Control doctor took voluntary blood samples from members of the California-8 and Florida-1 US&R Task Forces to study long-term effects and will provide FEMA the results of that study. In addition, another doctor who is a member of Indiana Task Force-1, created a database of medical problems he was seeing while in New York at the Jacob Javits Center. Also, the Ohio Task Force developed a survey for their members to capture any illnesses that they may have and provided the survey to the other Task Forces.

Personal Protective Equipment (PPE) requirements are incident specific and the US&R Task Forces and Incident Support Teams (IST) are trained on evaluation and detection to determine the level of appropriate gear. PPE requirements for this incident were briefed to the Task Forces and IST during deployment. The standard equipment was P-100 APR's (respirators) and an ample stock was maintained at the Jacob Javits Center for IST and Task Force members to use.

FEMA will continue to encourage the 28 US&R Task Forces to monitor their World Trade Center deployed personnel for any medical issues and to use the Workman's Compensation Program.

In another critical health area, we provided support to address the long-term mental health of responders and others who may have been affected by this tragedy. We coordinated and facilitated the actions necessary for the National Association of Fallen Firefighters to work directly with the Fire Department of New York (FDNY) in providing immediate and long-term crisis and grief counseling to fire fighters and their families. We also funded Project Liberty, a long-term mental health disaster recovery program administered by the New York State Office of Mental Health. To date almost $23 million has been approved for this program.

assistance for clean up to ensure safe reentry of buildings

As you know, because of the amount of dust and debris that resulted from the building collapses, clean up of residences and the surrounding area has been a major priority. We provided housing assistance grants to be used for clean up of residences. In addition, the New York State-administered Individual and Family Grant program provided grants for

items such as High Efficiency Particulate Air (HEPA) vacuum cleaners, air filters, and other eligible items to help residents with reentry into their homes. In many cases landlords and/or insurance companies funded clean up. I should also mention that voluntary agencies were very active and helped with clean up for Special Needs residents.

We also supported the New York City Department of Health through their Community Teams and our own Outreach Teams in distributing to residents flyers containing recommendations on actions needed in order to be able to re-occupy buildings and homes. This flyer addressed clean up and safety and health concerns and was developed to facilitate individuals moving back into their homes.

The Small Business Administration (SBA) was on site September 12 and opened their first office to serve the public on September 14. Through SBA, low interest loans are available to homeowners, businesses, renters and non-profit organizations to repair or replace damaged property. Additionally for businesses Economic Injury Disaster Loans (EIDL) were available to pay necessary obligations until business operations returned to normal. SBA assistance for physical loss has provided home loans for 306 individuals totaling nearly $4.7 million and 428 business loans totaling over $26 million. Eligible government clean-up costs and monitoring activities are being funded 100 percent through FEMA's Public Assistance program. For example, the New York City Board of Education's clean up of schools near Ground Zero is an eligible expense as is the clean up of city vehicles such as fire trucks and police cars.

lessons learned

We learn from every disaster experience and incorporate these lessons learned wherever possible into our planning and processes to improve the next disaster response. The World Trade Center and Pentagon disaster responses are no different. We have learned from both. We recognize the need to have alternate operating facilities and flexible response and operations plans that provide for actions such as establishing a Fire Support Branch, an External Logistics Team and robust and redundant communications networks. I should add, however, that the Federal response to the World Trade Center attack clearly reinforced the soundness of the Stafford Act and once again validated the effectiveness of the Federal Response Plan and current FEMA policies and procedures for responding to a disaster event.

authority and resources

All of FEMA's work, the response and rescue efforts, the recovery programs, and plans to prevent future events, have been created out of the authority the Environment and Public Works Committee has provided through the Stafford Act. This legislation has served us well and has provided the necessary authority and flexibility to empower us to do our best. You can be proud of your work and its results. All of us at FEMA thank you for your leadership. We believe current enabling legislation and resources are sufficient for FEMA to respond appropriately.

There is no doubt that the disaster response and recovery in New York City will be a long-term process, but the President has said that we will provide whatever assistance is needed to get the job done. I can assure you that FEMA will be there as long as needed.

Thank you Mr. Chairman, I would be pleased to answer any questions you may have.

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Response by Marianne Jackson to Additional Question from

Senator Lieberman

Question. Like so many other Federal employees, the members of the FEMA Massachusetts Task Force 1 have private health insurance which does not provide health care screening after deployment in potentially hazardous conditions such as the World Trade Center complex. Some members have already reported health problems. General concern has been expressed as to the long-term health effects of ``Ground Zero'' exposure. In order to provide both adequate care and answers to such long-term effects, what is FEMA doing to screen and monitor these members who were deployed to WTC? Is what we are doing sufficient? If not, and since time may be critical, what can be done to expedite a solution?

Response. As we watched the images of fire and smoke on September 11th and the days that followed, we immediately recognized that there was a potential risk to the health and well being of the rescue workers and we moved quickly to assign the mission for air monitoring to the U.S. Environmental Protection Agency through the Federal Response Plan. As the disaster response unfolded, FEMA Urban Search and Rescue (US&R) personnel worked closely with local incident management officials and supporting Federal agencies to determine and provide appropriate levels of personal protective equipment based on the best available information. In addition, FEMA met with Department of Labor representatives to identify and coordinate requirements and procedures for processing any US&R workers compensation claims arising from the WTC and Pentagon responses.

As US&R Task Forces returned home, higher than expected illnesses were reported by some of the Task Forces. FEMA encouraged Task Force personnel to file Federal worker compensation claims and contact FEMA's Worker's Compensation Agent, LIFECARE, to receive information on how to seek treatment if they suspected their illness was related to the response, and to also provide a record of those individuals who took part in the response and the dates of their mission deployment. FEMA has surveyed all participating Task Forces to develop data on which members worked these disasters and the amount of time they worked in the impact areas. This information is still being received from the Task Forces and compiled.

In February and March, FEMA hosted a series of meetings involving the Department of Health and Human Services, the Environmental Protection Agency, the Occupational Safety and Health Administration, the National Institutes of Health, and the Agency for Toxic Substances and Disease Registry to discuss possible approaches for properly addressing the long-term health effects of the September 11th attack on the responders and others. Participants in the meeting were tasked with developing recommendations for action. A number of strategies were proposed the week of March 11th and are under an expedited review. FEMA continues to monitor US&R responder health issues and support processing of all workers compensation claims received from the Task Forces.

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Responses by Marianne Jackson to Additional Questions from Senator Clinton

Question 1. What assistance has been provided to the schools and to local tenants (commercial and residential) through FEMA for cleanup of indoor air and dust?

Response. The following assistance has been provided for cleanup of indoor air and dust:

cleanup at public schools

FEMA has provided funding, or is currently developing estimates for funding, in all cases where the New York City Board of Education has requested clean up of dust at public school buildings owned by the Board. This funding, estimated at $4.7 million, covers cleanup of contents and equipment, cleanup of interiors and exteriors, testing for hazardous materials, and abatement of those materials if discovered.

air monitoring at schools

FEMA is providing funds to the New York City Department of Environmental Protection (DEP) for rooftop air monitoring at city schools. Immediately after the collapse of the World Trade Center Towers, DEP began conducting monitoring for asbestos, acid gases, metals, and volatile organic contaminants at schools in each of the five boroughs; DEP discontinued this activity after one month, incurring costs of approximately $730,000. DEP continues to monitor for asbestos at four schools immediately adjacent to the World Trade Center site. FEMA is considering funding this activity through completion of debris removal operations; the cost is estimated at $240,000.

The New York City Board of Education has requested assistance with interior air monitoring at six schools in the vicinity of the World Trade Center site. The estimated cost of this monitoring is $3 million. FEMA has agreed to fund testing for the period prior to occupancy of the buildings (estimated costs of $1.5 million), but has not yet determined the eligibility of on-going air monitoring inside the buildings after the students have reoccupied them. This determination is based on the assumption that students would not be allowed in the buildings if a potential health hazard existed.

cleanup of new york university (nyu) facilities

FEMA has not yet provided funding for the cleanup of the New York City public school buildings at 90 and 100 Trinity Place. The Board of Education spent approximately $2.5 million to clean the interior, exterior, and ductwork of these buildings, as an emergency health and safety measure. However, the Board of Education leases these buildings from NYU, which is responsible for such work. FEMA can provide funding for such work only to NYU as the entity with legal responsibility for these facilities.

cleanup of residences and commercial businesses

FEMA, in cooperation with the New York State-administered Individual and Family Grant Program, is providing eligible occupants with high-efficiency air filters that trap minute particulate matter. Others have received funds for general clean up and smoke abatement. The Small Business Administration Disaster Loan Program assists commercial businesses.

Question 2. What were the greatest challenges that FEMA faced in its response to the September 11th attack on the World Trade Center?

Response. Among the major challenges facing FEMA in response to the attacks of September 11th were obtaining operational information, communications inter-operability, and flight restrictions.

From an operational standpoint, trying to gather information about the incident, what happened, what assistance was needed, along with the requirement to gather information about what else might be occurring presented a challenge. The attack, which directly affected the New York City Office of Emergency Management and the Fire Department of New York, impacted the flow of information. The attacks essentially created 4 major incidents that we had to respond to that developed in rapid succession, with the very real possibility that additional attacks were

likely. As a result, it was necessary that we moderate our initial response until we had a better understanding of the big picture. Once we had a better handle on the situation, we were then able to deploy additional resources to New York City and the Pentagon.

From a communications standpoint, communications interoperability issues impacted our capability to collect and exchange information. The inability to have common communications capability at the initial stages of the response slowed our ability to gather information, and to coordinate the Federal response. Cell phone saturation created another major communications challenge. This event clearly pointed out the high level of dependence of Federal, State and local responders on cell phones for communications and the vulnerabilities that can be associated with this mode of communication.

The decision to impose flight restrictions certainly was a good one, and undoubtedly saved a great number of lives, but it limited our ability to deploy and move resources and emergency teams. Because our contingency planning had never anticipated that a flight restriction would be put into effect, we had not planned on how to move emergency teams from all parts of the country without air transport. While the flight restrictions did delay some of the initial responses, we were able to work around the problem and move teams by ground transport. Since September 11th, we have worked with U.S. Department of Transportation to develop alternative movement plans and established plans for flight restriction waivers and priority air shipments.

Question 3. It appears that there have been more applications to FEMA for human assistance in conjunction with the September 11th attack on the World Trade Center deemed ineligible or denied by FEMA than have been reimbursed. Please confirm and explain why this is the case? How does the ineligibility/denial rate compare with other disasters?

Response. Traditionally, FEMA's Mortgage and Rental Assistance Program averages a 20 percent to 30 percent eligibility rate. The current rate for New York is 28 percent. Several factors contribute to this low rate. Two of the more prominent criteria for program eligibility are that the applicant must have suffered a loss of household income totaling 25 percent or greater and that the applicant have delinquent mortgage or rental payments as a result of the disaster. Of the applicants determined ineligible, 64 percent did not meet the criteria in these two categories. That is, household income was not affected to any substantial degree and/or the applicant was not delinquent on a housing payment.

It should be noted that these determinations are made based on the initial application. If circumstances change, applicants can re-establish their eligibility.

Question 4. What resources can FEMA provide to conduct long-term health monitoring of first responders, other rescue and response workers, as well as workers, residents, and school children in Lower Manhattan?

Response. FEMA will provide the following resources:

first responders

FEMA has provided funds to the U.S. Department of Health and Human Services, Public Health Service, to conduct baseline testing of first responders. The funding, $9 million, was used to take blood samples from 11,000 fire fighters and 4,000 New York State employees. This work is now complete.

civilian workers

The New York City Office of Labor Relations has indicated that they may request FEMA funding for first-phase medical monitoring of civilian workers at the World Trade Center site. The city estimates the cost for providing this testing to 2,000 workers to be $140,000. At this time, the city has not provided sufficient information on the proposed request for FEMA to evaluate the eligibility of this activity. If FEMA determines that the testing is necessary to respond to an immediate threat to health--as with the testing done for first responders--the cost of the testing would be eligible.

Question 5. What is the estimated budget and expected time frame for completion of cleanup?

Response. The estimated budget and timeframe for completion is as follows:

assistance to the city of new york

The current cost estimate for removal of debris at the World Trade Center site is $1.325 billion. This estimate includes:

$750 million for work at the site by the City of New York and its contractors.

$575 million for disposal of debris at the Fresh Kills landfill, including barging contracts.

This estimate does not reflect funds that may be recouped through the sale of recycled steel; however, that amount is expected to be relatively small. The City of New York expects to complete work at the site by May 30, 2002.

direct federal assistance

FEMA is providing funds to the U.S. Environmental Protection Agency for the following activities related to debris removal operations:

Assessment of hazardous substances and oil releases--$13 million (complete)

Development and implementation of decontamination plan--$15 million (complete)

Set-up of hygiene station at the site--$4 million (complete)

Operation of wash stations at the site and landfill--$24.5 million (until March 31)

Hazardous materials advisory activities--$1.5 million (until March 31)

Air monitoring at the site and landfill and in Lower Manhattan, the four other boroughs, and New Jersey--$25.7 million (through September 30)

FEMA is also providing funds (approximately $1 million) to the U.S. Army Corps of Engineers for technical support at the landfill. The total amount of Direct Federal Assistance is $84.7 million.

Question 6. There are reportedly many building roofs and terraces in and around Ground Zero that have not been cleaned since September 11th. Will FEMA provide assistance in this regard?

Response. Yes, FEMA will provide the following assistance:

public buildings

FEMA has provided funding, or is developing estimates for funding, for cleanup of dust at facilities owned by public entities throughout Lower Manhattan. This funding covers cleanup of contents and equipment, cleanup of building interiors and exteriors, testing for hazardous materials, and abatement of those materials if discovered.

private buildings

The New York City Department of Environmental Protection (DEP) has

requested assistance with inspection and cleanup of buildings within the area of Lower Manhattan bounded by the Chambers Street, Battery Place, Pearl Street, and the Hudson River. DEP estimates that, of the approximately 500 private buildings located within this area, 250 buildings will require cleaning of facades, roofs, and terraces. The U.S. Environmental Protection Agency has provided FEMA with a determination that a possible health threat exists due to the presence of this dust. Consequently, FEMA has agreed to assist DEP with the cleanup of exteriors of these buildings as an emergency measure.

The cleanup, currently estimated at approximately $10.5 million, will include testing for asbestos-containing materials and any abatement measures necessary if such materials are discovered. FEMA will fund a one-time cleanup of the buildings, as well as any overtime costs DEP incurs for contract management and inspection. DEP is responsible for ensuring that building owners are aware of the effort, identifying those structures that require cleanup, and securing right-of-entry and indemnification for work on these buildings. Additionally, the city is responsible for ensuring that there is no duplication of benefits with insurance proceeds. FEMA will not provide funding for a series of cleanup efforts for these structures, nor for long-term monitoring activities.

city streets

Immediately after the collapse of the towers, DEP began testing surfaces to identify and isolate asbestos-contaminated areas. The results showed that many surfaces, including streets, sidewalks, buildings, vehicles, and playgrounds, were contaminated with hazardous levels of asbestos. DEP closed streets and businesses in contaminated areas and conducted round-the-clock asbestos cleaning and removal. The estimated cost of this activity, which is eligible for Federal assistance, is $114,000.

Question 7. What resources can FEMA make available for tenant groups and individual residents to hire professional environmental cleaning firms to remediate their homes? What assistance has FEMA provided in this regard to date?

Response. Under the Stafford Act, FEMA is charged with providing temporary housing while individuals work on their permanent housing solutions. Temporary housing is provided as a grant of up to $10,000 to make emergency repairs to a home to make it livable, including any applicable clean up. If the home cannot be made livable quickly for this amount, FEMA provides funds to rent alternative accommodations for up to 18 months while the individual completes permanent repairs.

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Statement of Carl Johnson, Deputy Commissioner, New York State Department of Environmental Conservation

Thank you for providing the New York State Department of Environmental Conservation (NYSDEC) with the opportunity to testify about our efforts to assist the residents and businesses of Lower Manhattan to recover from the devastation caused by the destruction of the World Trade Center Complex. We share, with Governor Pataki and our sister agencies, the highest level of commitment to managing the cleanup, and we appreciate the excellent coordination among all levels of government involved in this effort.

As with other New York agencies that have never reacted to a disaster of this magnitude, in many respects NYSDEC's efforts at the World Trade Center are unprecedented. Although these efforts spanned many environmental media and critical issues, I will focus my testimony

today on the air quality issues noted in the subcommittee's letter of invitation to Governor Pataki.

air quality monitoring and assessment

As soon as possible after the attacks on the World Trade Center, NYSDEC began to work with other State, Federal and local environmental and health agencies to monitor and assess the environmental impacts from the devastation. We established a multi-jurisdictional air-monitoring group to coordinate this effort, which initially focused on worker safety during the rescue efforts. Safeguards were put in place to prevent excessive exposure to contaminants released by the destruction of these buildings, and these safeguards remain in effect today.

Next, along with our sister agencies, we began the process of identifying specific monitoring needs and then put in place the process of collecting that information. NYSDEC, along with USEPA, OSHA, the State Department of Health, and the city of New York, continue this aggressive air monitoring effort. All of the data is posted on the EPA website as it becomes available. NYSDEC collects data specifically on asbestos, PM2.5, PM10 and dioxin.

Asbestos

Asbestos was used in the early stages of construction on Tower One, and as a result, asbestos levels have been detected occasionally in the samples we have collected. There are 18 monitoring locations in Lower Manhattan at which asbestos samples are collected. NYSDEC is responsible for seven of these sites, primarily located outside the exclusionary zone, in conjunction with USEPA. We operate the equipment and change the filters on a daily basis. Once our staff remove a filter, we forward it to USEPA for analysis. This data, like other asbestos data, is then uploaded to the USEPA website to ensure that the public has access to this information as quickly as possible.

In determining, together with our sister agencies, a standard to be used in monitoring asbestos levels, we decided on the asbestos standard most protective of public health--the Asbestos Hazard and Emergency Response Act (AHERA) standard of 70 structures per millimeter squared. This standard, which USEPA established, is used primarily for indoor air purposes and in schools to determine when it is safe for activities to resume in a school building once it has been cleaned of asbestos. Applied to outdoor air, this is a very conservative standard of comparison.

Our multi-agency agreement to use the AHERA standard ensures that there is a consistent approach used in analyzing the asbestos results. These results must be obtained using Transmission Electron Microscopy (TEM)--a method required to analyze for asbestos because it identifies individual asbestos fibers and does not confuse asbestos fibers with fiberglass or other fibers.

To date, more than 5,500 asbestos samples have been taken in Lower Manhattan, with only 31 of the total samples above the TEM AHERA level. Of those 31 samples, 27 were collected prior to October 9. The remaining four were reported after that date. All of the levels above the standard were observed in or very near to the exclusionary zone around Ground Zero.

Thousands of asbestos samples have been taken at the Staten Island Landfill to which debris is taken, with only 40 of the samples above the TEM AHERA level. All of the levels above the standard were observed within the exclusionary zone at the Landfill.

While we continue to monitor for asbestos, it is clear from the findings that the asbestos levels detected in the ambient air have not

generally been above what is considered a safe indoor air standard--one that is protective of the children in our schools.

NYSDEC also collects data from nine sites located in all five boroughs of New York City. To date, this data does not indicate that the TEM AHERA standard has been exceeded.

I would like to bring to your attention the results of the residential monitoring study performed jointly by the New York City Department of Health (NYCDOH) and ATSDR. In this effort, indoor dust and air in buildings around the World Trade Center in Lower Manhattan were sampled. The results of the study are only now becoming available, and appear to indicate that asbestos levels in indoor air are below USEPA standards. In some locations, asbestos was found in settled dust.

Particulate Matter

NYSDEC uses two types of sampling techniques to monitor for small particles in the air, also known as particulates. At present, we are sampling for both PM2.5 (fine particulates) and PM10 (both fine and coarse particulates) levels in Lower Manhattan. We have selected five new monitoring sites in Lower Manhattan--the Coast Guard Station in southern Manhattan, Park Row (near City Hall), the Borough of Manhattan Community College, Albany Street at West Street and Wall Street at Broad Street. Equipment at these sites is a combination of both continuous air quality monitoring devices and filter based air quality monitoring devices. The continuous air quality devices provide information on the levels of PM2.5 24 hours a day, 7 days a week. This data is reported automatically to two websites, one operated by the NYSDEC and the other operated by USEPA. Both are available to the public.

To date, the particulate levels in Lower Manhattan, as well as throughout the rest of the city, have not demonstrated significant increases. In fact, readings have been consistent with levels recorded prior to the attacks on the World Trade Center. At no time has there been a level of particulates monitored that exceeded the National Ambient Air Quality Standards for a 24-hour period for either PM2.5 (65 micrograms per cubic meter) or PM10 (150 micrograms per cubic meter). In fact, on only one day since the attacks occurred has there been a daily average recorded at any monitor throughout New York City that exceeded the 40 micrograms per cubic meter level that USEPA uses as a guideline for concern for sensitive individuals. Also located at our new monitoring sites are monitors to collect PM10 data. There has been no exceedance of this standard.

There has been some discussion about occasional spikes in the particulate levels which could present public health concerns. These short-term increases in particulate matter have been infrequent, and were present previous to the World Trade Center collapse.

Dioxin

Finally, the Department has been involved in the field work for dioxin monitoring. The Department maintains three sites and collects samples for dioxin analysis by USEPA. As in the case of asbestos and particulate levels, dioxins have been detected in some of the samples. However, the presence of dioxin is also consistent with the nature of a disaster such as this one, where fires continued burning for an extended period of time. While the early results were above USEPA's 30-year public health exposure guideline, since the fires were extinguished these levels are decreasing. Similar decreasing concentration trends have been observed for lead and PCB measurements.

Odors

The presence of odors in Lower Manhattan and concerns about eye, throat, nose and respiratory irritation are a cause of concern to those who live and work in this area. Odors, which can result from fires such as those that burned after the World Trade Center's destruction, have abated substantially. Short-term exposures to contaminants near the immediate area of the World Trade Center may have contributed to the irritation which some residents reported.

We monitor air quality for specific parameters and measure the results against standards that have been set as the result of lengthy public processes. Outside of the immediate area of the World Trade Center, we have not seen a significant cause for concern through our air quality monitoring. At the site, DEC and other agencies have consistently and strongly recommended that workers use appropriate safety equipment to minimize their exposure to these irritants. NYSDEC will continue its air monitoring activities and expand them as needed in consultation with the city and Federal agencies. We will maintain these activities until this effort is completed.

transportation conformity

I would like to raise to you a critical priority for the State of New York, along with the city of New York and neighboring counties. In nonattainment areas, the Clean Air Act Amendments of 1990 wisely requires State Implementation Plans for air quality and transportation plans, programs and projects to conform--so that the transportation projects which are put in place help congested areas, such as Southeastern New York, to attain National Ambient Air Quality Standards.

In the 10-county region which includes New York City, Long Island, and the lower Hudson Valley, the New York Metropolitan Transportation Council (NYMTC) is the Metropolitan Planning Organization (MPO) responsible for implementing this program. NYSDEC, the State Department of Transportation, USEPA and Federal transportation agencies oversee this process. NYMTC's state-of-the-art computerized simulation models, and its efforts to implement the conformity requirements of Federal law, are among the best in the Nation.

Among the many tragedies of September 11th, NYMTC lost three of its staff; its office space; and its computer hardware, models, and data bases in the terrorist attacks. While the Clean Air Act contemplated many circumstances under which natural disasters could affect a transportation network, it never contemplated an act of terrorism that would destroy an MPO's offices and much of its institutional knowledge. On one single day, over 100,000 jobs relocated from Lower Manhattan, and other jobs have been lost since then, making much of the previously used data obsolete.

NYMTC, along with other public and private businesses that had been housed in the World Trade Center, is struggling now to recover from this devastating loss. Along with moving to temporary offices in Long Island City, NYMTC is working to reestablish its models, and to develop data bases on the vastly different commuting patterns that now affect the transportation networks and air quality of New York City and surrounding counties. As it does so, we recognize the serious problem that the New York Metropolitan Area cannot proceed with major new transportation projects--even those needed to replace the networks damaged or destroyed on September 11th--without a limited and temporary waiver from the Clean Air Act's conformity requirements. Governor Pataki, along with transportation organizations, businesses, and commuters in this region, are greatly concerned about the need for this waiver, and I urge your strong support for it.

Already, we are working with staff from the Senate Environment and Public Works Committee, along with House Committee staff, on this problem. On behalf of Governor Pataki, I want to thank Senator Clinton and the committee staff for their sympathy and interest in the State's waiver request. As they have noted, environmental concerns with the waiver need to be considered as part of this process. We agree with this concern, and have met several times with environmental organizations to discuss the proposed waiver; how the State intends to oversee its implementation; and how we will ensure the maintenance of air quality during the period covered by the waiver. Our task is made easier by Governor Pataki's strong and well-demonstrated commitment to measures that protect and improve New York's air quality. We believe that the citizens and workers of the New York Metropolitan Area can rest assured that every effort will be made to continue to improve New York City's air quality while we work to recover from the devastation of September 11th.

diesel truck emissions

I also would like to raise the issue of idling trucks related to the cleanup. State regulation provides that no truck shall idle for more than 5 minutes, except in situations where the truck is to stand for more than 2 hours at a temperature below 25 degrees Fahrenheit. NYSDEC environmental conservation officers enforce this regulation, and encourage the reporting of idling complaints to the Department's Regional Office. In addition, the city of New York has an even more stringent requirement that allows only 3 minutes of idling, which city officers are able to enforce.

conclusion

I want to reiterate Governor Pataki's appreciation to the subcommittee for providing us with the opportunity to relate to you the actions that the State has taken and will continue to take since the morning of September 11th to respond to and clean up the devastation caused by the destruction of the World Trade Center Complex. For the number of staff hours that have gone into our efforts to date, the information that I have provided to you today is indeed brief. I hope, though, that it provides you with a sense of the commitment we feel to ensuring that public health and environmental quality are safeguarded throughout the activities we are undertaking to clean up this site.

I want to remind you, as well, that the State's commitment to Lower Manhattan will not end when all of the debris is removed from the site. We will continue to monitor air quality in this region, and we look forward to developing--along with the city of New York, the New York State Legislature, other State and Federal agencies and the citizens of Manhattan--environmentally sound plans for the future of this devastated area.

Thank you again for allowing me to testify before you today.

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Responses by Carl Johnson to Additional Questions from Senator Clinton

Question 1. Please provide further information on the State's efforts to reduce diesel emissions at the site.

Response. Late last year, the New York State Department of Environmental Conservation (Department) asked the Northeast States for Coordinated Air Use Management (NESCAUM) to convene appropriate State, local and Federal representatives to discuss efforts that could be undertaken to reduce diesel emissions from the ongoing recovery efforts at the World Trade Center site. The NESCAUM discussions also began tile development of diesel emission control practices for use during the

reconstruction phase that is scheduled to begin this year.

Given the nature of the cleanup, the Department recognized quickly that the only option for reducing diesel emissions during the recovery phase would be to require trucks and diesel equipment operating at the site to use ultra-low-sulfur diesel fuel (ULSD). During recovery, our options are limited to the use of low-sulfur diesel because of the lead time required to construct and install retrofit equipment on diesel engines. The retrofit equipment would not be available for diesel engines and trucks prior to the completion of the recovery effort at the site.

Since the initial meeting, the NESCAUM group has been working to make the switch to low-sulfur diesel at the World Trade Center site. The fuel is available and could be provided to the site for a small difference in price. We are working with Mayor Bloomberg's office to recruit various construction companies currently under contract at the site to make this switch.

We also are working with FEMA to ensure that the city of New York is reimbursed for the use of the low sulfur diesel during the recovery phase.

Question 2. There have been reports that some of the trucks transporting debris from the site are uncovered and not fully wetted down. Who is responsible for monitoring this operation? What further actions can be taken to ensure that this operation is conducted in a manner that is as clean as possible?

Response. During the course of the debris removal operation, the Department's law enforcement personnel have monitored truck tarping and decontamination activities. Our law enforcement staff have been instrumental in ensuring that dust control measures are in place and are being used. Any questions about dust control measures have been addressed immediately.

Shortly after the September 11th attack, measures were put in place to reduce the environmental impacts of the recovery and removal operation. These activities included the use of wash-down stations to decontaminate trucks and wetting down their loads to control dust. Continuously, roadways around Ground Zero have been wetted down to reduce dust. Using two piers which are nearer to Ground Zero than other transport points to the Staten Island Landfill, Pier 6 and Pier 25, also helped reduce the environmental impacts of the removal of debris. The shorter transport distances reduce truck emissions and the chance for dust to come off the loads.

Question 3. Why are the debris barges not being required to be covered in some fashion?

Response. Barges transported from the Marine Transfer Stations at 59th Street and Hamilton Avenue were covered by the netting systems that historically were used at these transfer stations to cover residential solid waste. Barges coming from Pier 25 and Pier 6 did not have these netting systems, and the size of the barges makes it difficult to cover them.

Other actions have been taken to control dust, and to protect against the loss of materials recovered from the World Trade Center site. The debris is wetted down to control dust, and the barges are not filled completely. Freeboard (essentially empty space at the top of the barge) is maintained from the top of the barge down to the top of the debris as an effective way to keep recovered debris from blowing. The relatively slow speed of the barges also reduces the possibility for

debris to be blown away in transit. The transport route of the barges is well separated from the general public to minimize their potential exposure.

Question 4. What actions will be taken during the rebuilding process to reduce as much as possible the noise, dust, diesel exhaust, and other forms of pollution at the site?

Response. As part of our discussions with NESCAUM and other State, local and Federal entities, we are looking at the long-term issues associated with emissions from the rebuilding activities that will begin later this year at the World Trade Center site. It is our intent to require the use of ULSD in all diesel equipment associated with the reconstruction efforts at the site. The fuel is available in the New York Metropolitan Area and can be readily supplied once a contractor selected for the reconstruction activities requests it.

With respect to retrofitting diesel engines, the Department will continue to work with New York City and contractors to maximize the use of diesel retrofit control technologies during reconstruction activities. We are seeking to identify a contractor that can pilot the use of both low-sulfur diesel and retrofit technologies. Through this pilot, we will establish a basis to demonstrate to the contractors involved in the reconstruction efforts that the diesel control program will not affect equipment operation and will not affect productivity. These are proven diesel emission reduction technologies, and the pilot project is meant to demonstrate that it is logistically possible to incorporate these strategies into the rebuilding efforts.

With respect to dust from the site, the City of New York should require the continuation of the dust control practices that are currently in place at the World Trade Center as part of the recovery effort.

Statement of Thomas R. Frieden, M.D., M.P.H., Commissioner, New York City Department of Health and Joel A. Miele, Sr., P.E., Commissioner, New York City Department of Environmental Protection

Good morning. I am Dr. Thomas Frieden, Commissioner of Health for New York City. With me today is Commissioner Joel Miele of the New York City Department of Environmental Protection. We appreciate having the opportunity to be here today. I am very pleased that the committee is holding these hearings. This is a complex and highly technical subject, and we would like to take this opportunity to explain how the situation is being monitored and let you know our views on the implications of these findings.

As I have reviewed the record of activities of DOH and other agencies since the first day of the disaster, one of the most vivid pictures to emerge, and one that I find quite extraordinary, is the tremendous cooperation and coordination among Federal, State and local environmental, occupational and health agencies. The degree of teamwork among more than a dozen agencies is probably unprecedented. For the first several weeks after September 11th, health and environmental agencies met daily to discuss environmental health issues. These meetings and conference calls continued three times a week through the end of 2001. Weekly conference calls continue.

i. department of health role

Following the attack on the World Trade Center, the New York City Health Department had a multifaceted role in overseeing and coordinating many health-related issues. Immediately after the attacks, the Health Department established surveillance systems to (1) monitor emergency departments in the immediate area to assess acute injuries

among victims, (2) assess hospital staffing and equipment needs citywide, (3) monitor illness and injuries among rescue workers at the World Trade Center site, and (4) detect unusual disease syndromes that might represent a bioterrorist event at emergency rooms throughout the city.

Other responsibilities included monitoring water and food safety in the immediate area, conducting rodent and vector control, initiating a worker safety program, and providing regular advisories to the public and the medical community regarding issues of public health concern related to the attack. The Department also facilitated development and coordination of environmental sampling plans and results.

Many individuals were exposed to large amounts of smoke, dust, and airborne substances during and after the initial collapse of the World Trade Center buildings. The potential release of contaminants, including asbestos, particulate matter, volatile organic compounds, dioxins, PCBs, metals and other substances during and after the explosion was a primary public health concern from the very beginning, and air monitoring was established immediately, and continued over time. The Health Department closely reviewed, and continues to review, the numerous air quality, debris sample results and personal air monitoring tests being conducted by various agencies. The data from air quality tests thus far have been, in general, reassuring. None of the testing done to date has shown results that would indicate long-term health impacts.

The numerous substances of potential concern have led to some confusion about health effects over the short and long term. Some substances, such as the particulate matter from the dust or the smoke in the air, can be irritating but are not expected to have long-term effects. Other substances, such as asbestos, are not expected to have short-term effects, but if elevated over long periods of time can have serious health effects. Asbestos was one of the substances of greatest concern since it was a known building component in the World Trade Center. However, except for a few transient spikes found in air sampling during the initial weeks, the asbestos levels have been within standards.

An indoor study conducted by Department of Health and the Federal Agency for Toxic Substances and Disease Registry (ATSDR) of both air and dust samples taken in November and December of 2001 at 30 residential buildings in Lower Manhattan showed no elevated levels of asbestos in the air. Dust sample tests showed low levels of asbestos in some samples and the presence of fiberglass in some other dust samples. Asbestos and fiberglass can be a problem if they become airborne. Airborne fiberglass can cause cough and skin, throat and eye irritation. While there are no known long-term effects of fiberglass, it is classified as a possible carcinogen. While these findings are not unexpected, they underscore the importance of properly cleaning surfaces to minimize exposure. DOH has issued advisories to building owners and residents about appropriate cleaning methods. DOH has issued advisories for residents about appropriate cleaning methods.

The standards used are very conservative. For example, for asbestos, we are using the indoor air quality standard for reentry into a school after asbestos removal. This stringent standard is being applied to outdoor air quality in the residential areas. Stringent standards are also being used for other substances, such as dioxins, identified at the perimeter of the site. It is both duration of exposure and concentration of the substance that are important to determine health effects. Many of the standards were based on exposures

for prolonged periods of time. This is a key point. Some substances may cause short-term effects; others have the potential to cause long-term impact. In some instances, the health effects of exposures are not known. Standards for other substances have been designed to include many safety factors so that acceptable levels of exposure are far below the levels at which health effects are expected to occur.

Many residents living and working in the community have reported short-term health effects, such as acute breathing problems; worsening of existing respiratory disease such as asthma; eye, nose, and throat irritation; nausea, and headaches. Many residents also continue to experience emotional and stress-related illness and anxiety.

Students of Stuyvesant High School, who returned to their school on October 9, 2001, reported similar complaints. DOH performed an analysis of these complaints, which shows that the average daily rate of headaches, respiratory, skin, eye, throat, and injury complaints of Stuyvesant was higher in October and November of 2001 than in the previous year, and higher than four other NYC public high schools. The data also shows that complaints decreased from October to November 2001.

DOH has also been working with the U.S. Centers for Disease Control and Prevention to develop a protocol for a World Trade Center Registry, which, if funded, would generate and maintain a database that can be used as a basis for conducting studies that can provide a more complete picture of short- and long-term health and mental health impacts among affected populations.

The City Health Department recognizes residents' concerns and will continue to work closely with local, State and Federal agencies to monitor air quality and to inform the public of findings as soon as results are available. Together with the City Department of Mental Health, which is also under my jurisdiction, we are addressing resident's mental health concerns by promoting the ongoing Project Liberty program, a statewide disaster-recovery initiative that offers free crisis counseling, education and referral services. DOH will continue its community outreach and education efforts. Now I would like to turn to Commissioner Miele to discuss DEP's role in our joint efforts.

ii. the role of the department of environmental protection

In addition to DEP's operation of the city's sewer and water systems, our expertise in regulating asbestos in New York City was a significant portion of our responsibilities following September 11th. Since 1985, DEP has been the New York City agency with responsibility for regulating asbestos abatement. Starting September 12, DEP operated a network of outdoor air monitors that have been used for monitoring outdoor asbestos levels. Aside from repairing water and sewer infrastructure, assessing and mitigating risks caused by the presence of asbestos-containing material has dominated DEP's work in responding to the Trade Center attack.

Since September 11th, DEP or its contractors analyzed 3060 samples from 37 outdoor monitoring sites in Lower Manhattan; 500 samples collected adjacent to the four schools in the vicinity of the Trade Center; and 328 samples taken in the four boroughs of the city outside of Manhattan. The map and all sampling results to date from the sites shown on this map are available to anyone on DEP's website: www.nyc.gov/dep. Of these samples, only 9 of the total of 3864, or 0.2 percent, exceeded the Federal re-occupancy standard for indoor air. These 9 samples were all taken in the vicinity of Ground Zero. As Commissioner Frieden noted, there is no established standard for

asbestos in outdoor air. Unlike carbon monoxide, nitrogen oxides and other gases whose presence in outside air is regulated under the Clean Air Act, asbestos is a once-prevalent building material, and previous work at standard-setting has focused on establishing safe levels for asbestos within buildings. On September 12, when my colleagues and I were creating our monitoring networks, we knew that there were no reliable, scientifically-based, acceptable standards that would tell us what level of asbestos in outdoor air might be considered ``safe'' or ``unsafe.'' Therefore, we opted to use EPA's indoor post abatement re-occupancy of schools standard as our threshold level of concern since we felt it was more protective.

Let me briefly explain our sampling methodology. The samples are collected on filters and examined under PCM (Phase Contrast Microscopy) utilizing a specific method developed by the National Institutes for Occupational Safety and Health. The PCM analysis counts all fibrous particles, including asbestos. PCM sample results are compared to the clearance/re-occupancy standard for indoor air following an asbestos abatement project. This standard is 0.01 fibers per cubic centimeter. Samples found to be above this standard are re-examined using TEM (Transmission Electron Microscopy). The TEM analysis identifies the type of particles collected. TEM results are compared to the clearance/ re-occupancy standard for indoor air in schools after an asbestos abatement project. This standard is 70 structures of asbestos per square millimeter. The standard was established pursuant to the Federal ``Asbestos Hazard and Emergency Response Act'', usually known as ``AHERA''.

Based on all Federal, State and local test results, public health experts have consistently expressed confidence that, based on sampling, airborne asbestos levels do not pose a threat to human health. Health professionals have stated that short-term exposure to airborne asbestos, at levels equal to or lower than 0.01, carries an extremely low risk of causing asbestos-related illness.

Before allowing occupants in any residential or commercial building near the Trade Center site, the city's various agencies, acting through its Office of Emergency Management, required building owners to take these steps:

assess the building's structural strength and stability using qualified professionals;

restore gas and electrical service;

restore building water service, including flushing, re-filling and cleaning roof tanks where necessary;

assess the presence of hazardous materials such as asbestos, and remediate as required under applicable city regulations using qualified professionals; and

inspect, clean and repair mechanical and HVAC systems.

While property owners were accomplishing these tasks, DEP and its sister agencies, again acting through the Office of Emergency Management, assumed responsibility for cleaning streets, sidewalks and common areas so that there was a safe outdoor environment to reach the buildings for contractors and workers who were retained by owners and managers to effect all necessary exterior and interior cleanup of private buildings. To assist property owners, DEP engaged in the following tasks, among others:

developed and distributed advisories to building owners and occupants;

established HELP lines for concerned owners or tenants to respond to complaints or concerns about proper abatement procedures for

contractors;

provided telephone consultation to building owners, contractors, consultants and tenants related to asbestos clean up;

performed site inspections and conducted building surveys;

reviewed sampling data submitted by building owners, their contractors and consultants;

reviewed the scopes of work for clean up of asbestos-containing material; and,

developed emergency certification procedures and offered daily certification exams to ensure a properly trained and qualified work force was available.

Although city, State and Federal agencies have provided oversight and guidance on interior clean up, that task remains the responsibility of building owners and occupants. For example, some building owners identified the presence of asbestos-containing material (ACM) during their assessment for hazardous materials in areas of the buildings under their control. Once material is identified as ACM, New York City rules require that a licensed contractor with certified asbestos workers perform the clean-up activities. As noted above, DEP technical staff has been continuously available to assist in the development of plans for handling asbestos clean-up activities. At the completion of the cleanup activities, the city's regulations require clearance air sampling by licensed professionals prior to allowing re-occupancy of areas where asbestos work had been performed.

As general guidance to Lower Manhattan residents, the Department of Health developed a fact sheet ``Recommendations for People Re-Occupying Commercial Buildings and Residents Re-Entering Their Homes.'' This fact sheet, along with others on related topics, was distributed very widely in Lower Manhattan. These fact sheets offer general information on air quality issues as well as practical, ``how-to'' information on dealing with dust, debris and other potentially hazardous conditions that residents face as they return to their homes.

Finally, I have a few words concerning the potable water supply and the marine waters that surround the city. Although I believe the Subcommittee's major objective is to review issues associated with air quality, I would like to take a few minutes to assure the subcommittee that neither New York Harbor, nor the city's potable water supply were degraded by the Trade Center attack.

As a result of the attack, DEP and EPA were concerned that rainwater washing off the Trade Center site and into the sewers and the harbor could be polluted. Manhattan's sewers--as well as most city sewers--are combined sewers, meaning rainwater flooding into the sewers from the streets ends up in the same pipe as the sanitary flow. During a rainstorm, a percentage of this combined flow ends up at our treatment plants, and the remainder of the combined flow is discharged untreated into surrounding waters through outfalls located at the bulkheads. In the case of Lower Manhattan, the combined sewers serving that area lead to a very large pumping station at East 13th Street in Manhattan. From there, the sewage is pumped to Greenpoint, Brooklyn where it is treated at the Newtown Creek wastewater treatment plant.

DEP routinely samples raw sewage going into the Newtown Creek plant, as well as treated effluent coming out of Newtown Creek, several times each day. We also regularly take samples from open waters at various locations in New York Harbor, including near the Battery. DEP tests these samples for ``conventional parameters,'' such as temperature, pH, dissolved oxygen, suspended solids and coliform. These conventional parameters have consistently remained within their normal

ranges since September 11th.

Using the more sophisticated testing capabilities that EPA has at its disposal, beginning September 11th, their staff immediately began supplying us with results from tests for ``unconventional parameters'' on samples of run-off from the Trade Center site, harbor waters, and sewage. These unconventional parameters include PCB's, dioxin, asbestos and other organic chemicals and contaminants for which the city's harbor water quality laboratories do not routinely test. Initial runoff samples taken near Rector Street showed elevated levels of PCB's, dioxin, asbestos and metals. Follow-up samples showed concentrations of these substances below levels of concern. Samples of harbor water and samples of effluent from the Newtown Creek plant also show the presence of ``unconventional parameters'' at levels too low to be of concern.

Finally, let me reassure all New Yorkers that continuous sampling of the drinking water supply at the reservoirs, in the aqueducts, and within the city's distribution system have shown all parameters to be within the normal range and below any levels of concern.

Thank you Mr. Chairman and Senators for this opportunity to present testimony. We look forward to answering your questions.

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Responses by Thomas R. Frieden to Additional Questions from Senators Lieberman and Voinovich

Question 1. In your testimony, you mentioned a World Trade Center Registry. Can you elaborate on this concept?

Response. Over the past few months, the New York City Department of Health (NYCDOH), in collaboration with the Centers for Disease Control and Prevention (CDC), has developed a protocol for a comprehensive WTC Registry Such a registry is an important public health tool that will provide a population base for assessing potential short- and long-term health impacts. The Registry will include workers and responders to the WTC site and Fresh Kills Landfill, evacuees of impacted WTC buildings, residents, and people working within defined perimeters at the time of and shortly after the disaster. The registry could include more than 100,000 people and would provide a system of followup for 10-20 years. Substantial funding is, therefore, needed to implement and maintain the Registry. It is our understanding that the Agency for Toxic Substances and Disease Registry (ATSDR) has requested funding from the Federal Emergency Management Agency (FEMA) for the Registry and that if the funding is awarded, ATSDR would collaborate closely with the New York City Department of Health, which would administer the Registry.

Question 2. In February, the Department of Health put out a press release regarding some preliminary findings on indoor air, which you also mention in your testimony. There is a discussion of fibrous glass found in indoor air samples. Can you please elaborate on this? At what levels did the fiberglass occur? Can people remediate this dust in the same way that, they do asbestos-containing dust?

Response. As mentioned in the original testimony, the New York City Department of Health, in collaboration with the New York State Department of Health (NYSDOH) and the ATSDR, conducted Residential Air and Dust Sampling in 30 Lower Manhattan buildings. In each building, attempts were made to collect dust and air samples from one common area (e.g. lobby, hallway); an outdoor area (e.g. near front entrance); and two individual apartments. Fifty-nine apartments were sampled. Fibrous glass was detected in settled dust samples from 23 of the apartment samples, 11 of the common areas, and 9 of the outdoor area samples.

Fibrous glass, when detected, ranged from 2 percent to 35 percent of total detectable fibers in the indoor samples and from 15 percent to 72 percent in the outdoor samples. The results of the dust samples underscore the importance of wet cleaning and HEPA vacuuming to reduce dust in indoor environments. Sampling was also conducted to better clarify what, if any, fibrous glass was found in the air samples. These results, which are pending, will be included in the final ATSDR report.

Question 3. In your press release, you indicate that there were two dust samples which had greater than 1 percent asbestos--the definition for asbestos--containing material. Were these indoor dust samples or outdoor dust samples?

Response. Two of the dust samples were determined to be asbestos-containing materials (as defined as material that contains 1 percent or greater of asbestos as assessed by Polarized Light Microscopy (PLM)). Both of these samples were collected outdoors and professional asbestos-abatement work was completed.

Question 4. Is the Department of Health making detailed information from this indoor air sampling available on its website? If not, why not?

Response. The NYCDOH and ATSDR will provide a full report to the public, not only on the website, but also through public meetings, as soon as the final report is available from ATSDR. Two community meetings were, already held to explain the asbestos and fiberglass results: The final report is expected to be completed in late spring 2002. Information on this study is also available on the ATSDR website at, www.atsdr.gov. In addition, New York City has recently established a toll-free WTC, Hotline that can be accessed at (212) 221-8635. The Hotline responds to WTC-related indoor and outdoor air quality inquiries, provides referrals for specific requests, and maintain a data base to identify problems to be addressed.

Question 5. Do you have adequate resources to meet response needs? Has access to resources been an obstacle to fulfilling your responsibilities in this regard?

Response. As with other responding agencies, the New York City Department of Health has had to stretch existing resources to respond to expanded public health needs following the WTC disaster. Although assistance from State and Federal public health agencies has been very helpful, there is still much that needs to be accomplished. For example, the WTC Registry will need substantial funding for establishment and maintenance over 10-20 years. We are also working with other agencies to ensure an efficient integration of activities and to decrease duplicative efforts as we seek additional funding. The NYCDOH is anticipating further funding from FEMA to continue to address the needs of Lower Manhattan.

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Statement of Thomas J. Scotto, President, Detectives Endowment Association, Inc., New York City Police Department

On behalf of all of the members of the NYC Police Department, I wish to express our appreciation to this committee for affording us the opportunity to express our concerns regarding the aftermath of the tragic events of September 11, 2001.

Since that date, members of the NYC Police Department have worked around the clock at the World Trade Center and the Staten Island Landfill.

As such, they have been exposed to a number of identifiable toxic substances and perhaps 100's of other combinations of these toxins that may never be identified and the long-term health effects of which are still unknown.

The major concerns of police officers can be grouped into 3 categories.

1. The development of a uniform procedure to provide physical exams over an extended period of time to monitor the overall effects of their exposure to the elements at Ground Zero and the Staten Island Landfill.

2. Assuring essential and required medical treatment within the basic health coverage provided by the city.

3. In recognition of the fact that many of the illnesses which result from contact with toxic substances can take in excess often 10 years to appear:

(a) Revise the current pension provisions to protect the families of those who retire and then may suffer a debilitating and/or terminal illness as a result of their exposure to Ground Zero and the Staten Island Landfill environment.

(b) Revise the current legal requirement which imposes an unrealistic time limit on ones ability to commence an action against the city.

Statement of Edward J. Malloy, President, Building and Construction Trades Council of Greater New York

Good morning Mr. Chairman and members of the subcommittee. My name is Edward J. Malloy. I serve as president of the Building and Construction Trades Council of Greater New York, an organization consisting of 60 affiliated local unions and district councils representing more than 100,000 working men and women in New York City. I also serve as an appointee of Governor George E. Pataki to the 11-member Board of Directors of the Lower Manhattan Redevelopment Corporation. Thank you for the opportunity to testify before the subcommittee and for bringing this hearing to New York.

On the morning of September 11, 2001, nearly every unionized construction project in New York City shut down as workers rushed to Ground Zero. In the early days of this tragedy, it is estimated that more than 10 thousand of our members volunteered their skills on the site. In the ensuing weeks and months since, when the City of New York's Department of Design and Construction (DDC) assigned recovery and clean-up responsibilities to a team of the area's most respected contractors, approximately two thousand of our members per day were employed in two around-the-clock shifts of 12 hours each. Today, as this recovery and clean-up effort moves toward conclusion, several hundred of our members remain on the job.

In testifying before the subcommittee this morning, we would like to draw your attention to two areas of interest and concern. The first is the record on measurable safety and health data and the partnership between labor, management, and Government which has produced rather impressive results in this regard. The second is the less certain issue of how we address safety and health exposures which are not as easily detectable as common bumps and bruises. On this second front, although significant efforts through our safety and health partnership have been made to prevent such exposures, there is an immediate need for clinical medical services to be made available to identify and treat any conditions that may not have been prevented or yet detected.

First, on November 20, 2001, the Building and Construction Trades Council of Greater New York joined with the Building Trades Employers

Association, the Occupational Safety and Health Administration (OSHA), and other public and private entities working at Ground Zero to implement an emergency safety and health partnership agreement on the site. A copy of this agreement is attached to our testimony for your consideration. It should be stressed that prior to this agreement being executed, labor and management in our industry had been working under less formal but effective means with OSHA and DDC to assure the implementation of a safety and health program in which every member of the building and construction industry on the site was required to participate.

The results of this partnership and other cooperative efforts are encouraging. With more than 2 million hours of labor completed, there have been 96 claims for workers' compensation reported. Of these claims, 13 have resulted in lost time due to injury or illness. No deaths or life-threatening injuries have occurred. All experts with whom we have consulted advise that the number of injuries and illnesses, as well as their relative severity, are well below what might have been expected. It is our intention, with both a continuation and expansion of the commitment to safety and health, that this record be maintained and improved. As we are sure the subcommittee is aware, however, the circumstances of this project dictate that good providence in addition to the most diligent human attention to safety and health concerns will be required if our intentions are to be fulfilled.

The second matter of concern pertains to the need for clinical medical services to be made available to every individual who has either resided, volunteered, or been employed at Ground Zero or in the nearby vicinity, particularly in the earliest days of this tragedy when it would seem that the potential for exposures to contaminants was at its highest. We appreciate Senator Hillary Rodham Clinton's efforts to secure $12 million for this purpose and submit to the subcommittee that additional funding must be provided to assure that every individual whose health has potentially been adversely affected by activities at or near Ground Zero is able to receive clinical medical services.

It is vitally important that individuals who may have been exposed to contaminants be screened and, if necessary, treated. Doing so will assure to the highest degree possible that conditions which can be treated and resolved are, and that conditions which may entail longer term consequences can be treated in a way that mitigates or even eliminates such consequences.

Taking action on this matter in a timely fashion will not only minimize the potential for human suffering, but also represent a responsible approach to minimizing the negative fiscal implications of healthcare and insurance costs which have come to be associated with the events of September 11th.

It is also really important that these services be made available in a well-organized and centrally-accountable manner so that a comprehensive and professional evaluation can be made of what the systemic exposures to contaminants and health problems at Ground Zero have been. To date, the majority of scientific evaluation of which we are aware has occurred with regard to monitoring contaminants in the air, water, and soil. It has not occurred as thoroughly in monitoring the blood, respiratory, and other body systems of human beings who may have been harmed by these exposures. We have attached for your consideration an initial proposal by the Mount Sinai Medical Center to provide the clinical medical services needed to address this situation for members of the building and construction industry. We of course support such services being made available to any other affected

individuals.

Mr. Chairman and members of the subcommittee, the losses and devastation caused by the events of September 11th are well-known. It is imperative that every effort be made to assure that no further unnecessary and preventable tragedies result, whether 10 days or 10 years from now. The provision of funding to make clinical medical services available to all individuals who need them is among the most important work that we believe the Federal Government can undertake going forward. We do not hesitate to argue that it is a particular moral obligation to assure that those men and women who responded so selflessly and even heroically to the events of September 11th receive every possible consideration for their well-being that can be offered. We will be pleased to cooperate with you in every way to achieve this goal.

Thank you.

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WTC Emergency Project Partnership Agreement Between U.S. Department of Labor Occupational Safety and Health Administration and Site Co-Incident Commands NYC Department of Design and Construction (DDC), NYC Fire Department (FDNY); Employee Association, Building & Construction Trades Council of Greater NY (BCTC); Employer Associations, Building Trades Employers' Association (BTEA), Contractors Association of Greater New York (CAGNY), General Contractors Association (GCA); Prime Contractors, AMEC Construction Management, Inc., Bovis Lend Lease LMB, Inc., Turner/Plaza Construction Joint Venture, Tully Construction. Co., Inc.

Whereas the United States Department of Labor Occupational Safety and Health Administration (OSHA) and the undersigned parties mutually recognize the importance and value of contractors, employees, employee representatives, and Federal, State and city government agencies exerting leadership by bringing their respective skills to bear in a cooperative, focused, voluntary effort to ensure a safe and healthful environment for all personnel involved in the WTC Emergency Project.

Accordingly, to advance our mutual goal, we strongly agree on the need to continue to develop a working relationship that fosters mutual trust and respect for each organization's respective role in the WTC Emergency Project. We recognize and embrace the responsibilities inherent in those roles and are committed to work as partners to achieve the following shared strategies and objectives:

Prevention of occupational related fatalities and serious injuries and illnesses for all workers involved in the WTC Emergency Project

Compliance with and implementation of the WTC Emergency Project Environmental, Safety and Health Plan

Immediate abatement of all serious hazards

The sharing of all exposure monitoring data to include sampling for air contaminants, noise, heat and cold, radiation and biological agents

The sharing of a11 safety hazard data

All of the undersigned parties agree to continue to work in cooperation with organizations assisting in the WTC Emergency Project to achieve the above mentioned goals of this agreement including but not limited to; NYC Office of Emergency Management (OEM), New York City Police Department (NYPD), NYC Department of Health (DOH), NYS Department of Environmental Conservation (DEC), NYS Department of Labor--Public Employee Safety and Health Program (PESH), Port Authority

of NY & NY, Liberty Mutual Insurance Company, Environmental Protection Agency (USEPA), Building and Construction Trades Department of AFL-CIO (BCTD).

This agreement shall be in effect until the completion of the WTC Emergency Project. Should any party choose to withdraw prior to the WTC Emergency Project's completion, a notice of intent to withdraw will be provided to all parties 30 days prior to any proposed termination. Changes maybe made by any party to this agreement with the written concurrence of all parties.

References:

1. WTC Emergency Project Environmental, Safety and Health Plan
2. Strategic Alliance between USDOL/OSHA, BTEA & BCTC--November 21, 2000

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Mt. Sinai I.J. Selikoff--Center for Occupational & Environmental Medicine

Proposal: Medical Surveillance Program for Construction and Infrastructure Repair Workers Exposed to Environmental Contaminants From the World Trade Center Disaster

background

Hazardous exposures, such as asbestos, silica, fibrous dusts, heavy metals, PCBs, polycyclic aromatic hydrocarbons, dioxins, and noise, related to the World Trade Center disaster may result in short-term and long-term illness among people working at or near Ground Zero. Short-term health effects of exposures may include asthma/reactive airways disease, chemical burns or irritation of the nasal passages, throat, and upper airways, sinusitis, persistent cough, musculoskeletal disorders, noise-induced hearing loss, and psychological problems, such as post-traumatic stress disorder. Some of these health problems can become long term if left untreated.

Therefore, there is a great need for medical surveillance to detect current illness, recommend treatment regimens, and provide baseline examinations should other health problems related to the disaster arise.

Medical Surveillance Program

A three-phase program is proposed:

Planning Phase. --Identify exposed workers; analyze exposure data; develop educational and benefits information materials; develop secure and confidential data base to support project administration and long-term followup.

Clinical Examination Phase.--Conduct baseline exams; provide results to examinees; coordinate clinical followup; continue outreach; manage data base.

Evaluation Phase.--Analyze results from medical exams; generate report and disseminate results; develop recommendations for long-term clinical followup and preventive measures to reduce disease incidence in this population.

Contents of Baseline and Followup Medical Surveillance Examinations

The actual contents of the baseline and followup exam will be based on review of current data and updated as new information becomes available. For this proposal, the examination includes:

Standardized History.--Detailed work history at or near the WTC site; current symptoms; prior medical and occupational/exposure history.

Physical examination.--Particular attention to the nose, throat, respiratory, musculoskeletal and neurological systems.

Laboratory tests.--Complete blood count; blood chemistries; urinalysis.

Pulmonary function tests.

Chest x-ray.

Hearing tests.

Frequency and Scheduling of Examinations

First examination (baseline): As soon as possible.

Second examination: One year later. Additional examinations for some individuals may be recommended by examining physicians.

Third examination: Fifteen years later.

Estimated 2-Year Cost: $10,510,000.

Year 1: Planning Phase and Baseline Examination Phase; Administrative costs: $800,000; 7000 clinical examinations: $4,655,000. ($665. per individual).

Year 2: Followup Examinations; Administrative costs: $600,000; 7000 clinical examinations: $4,655,000. ($665. per individual).

Mount Sinai Center for Occupational and Environmental Medicine

The Mount Sinai Irving J. Selikoff Center for Occupational and Environmental Medicine, situated in the Department of Community and Preventive Medicine at Mount Sinai School of Medicine, has expertise in evaluating and managing occupational and environmental exposures, illnesses, and injuries. The Center integrates occupational medicine, industrial hygiene, ergonomics, social work, occupational health education, and coordination of return to work for workers who have suffered occupational injuries and illnesses. Our program emphasizes prevention as well as diagnosis, treatment, and management of occupational and environmental health problems. The Center specializes in addressing the very types of exposures and health consequences experienced by workers at the WTC disaster site.

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Statement of Stephen M. Levin, M.D. Medical Director, Mount Sinai--Irving J. Selikoff Center for Occupational and Environmental Medicine, Department of Community and Preventive Medicine, Mount Sinai School of Medicine

Chairman Lieberman, Senator Clinton, and members of the subcommittee. I am pleased to appear before you today to discuss the health impacts of the attack on the World Trade Center on September 11th, our understanding of the short-term and longer-range risks to health, and a perspective on what needs to be put in place to meet the needs of the thousands of workers and volunteers who played a role in the response to this disaster.

My name is Stephen M. Levin, M.D. I am Medical Director of the Mount Sinai--Irving J. Selikoff Center for Occupational and Environmental Medicine, in the Department of Community and Preventive Medicine at the Mount Sinai School of Medicine in New York. Our Center is funded by the New York State Department of Health and is part of a statewide network of occupational medicine clinics established by the State legislature to examine and treat workers who have developed illness or injury caused by their exposures at work. We have an explicit mission--to find ways to prevent occupational illness, placing us in the domain of public health. We provided over 6,000 patient services in the last year, and since September 11th, we have examined more than 250 men and women who worked or volunteered at or near

``Ground Zero.'' Most of these individuals came to us because they had respiratory symptoms that developed after their exposures there.

Our Center has long experience with the health consequences of exposures in the construction environment, and we were able, therefore, to predict, unfortunately all too accurately, what health risks were posed by the exposures at and near Ground Zero--exposures to the wide range of airborne irritants present in the smoke and dust caused by the fires and the collapse of the towers, just reviewed by Dr. Thurston. As with most cases of illness caused by environmental agents, the likelihood of developing illness and the severity of that illness depend largely on dose--how much exposure has occurred.

I want to discuss today what we have observed among adults who were exposed at the World Trade Center site. My colleague and Department Chairman, Dr. Philip Landrigan, in the next panel will talk about risks to children. Among the people fleeing the buildings, the firefighters, police, and emergency medical technicians who responded, and the citizens who tried to help after the planes hit the towers--there were many who were caught in the huge, dense cloud of dust and combustion gases released by the collapse of the buildings. These groups had some of the worst exposures, inhaling high concentrations of smoke and dust. Those who came to the Ground Zero area after the collapse, in the first days and weeks after September 11th, to perform rescue and recovery work or to restore essential services there, also had heavy exposures, as they selflessly and often heroically did what they could in the effort to save lives. The thousands of construction and support workers who have been involved in the removal of debris from the site, often working 12 hour days, sometimes 6 or 7 days a week, also had all too frequent exposures to the dusts and gases which until recent weeks were a constant feature of the site.

We were concerned that these exposures would cause respiratory tract difficulties, and that is, in fact, what we have seen clinically. Problems range from persistent sinusitis, laryngitis, bronchitis, and among some, the first attacks of asthma they have ever experienced. The problems have been especially severe among those who had respiratory problems prior to September 11th--many have noticed a marked worsening of their pre-existing sinus problems or breathing difficulties. But what is perhaps most striking is the occurrence of respiratory problems--chest tightness, cough, shortness of breath, wheezing--among individuals who were in excellent physical condition before. The experience of our patients parallels that of the firefighters who have been evaluated by Dr. David Prezant, who I believe is here today and perhaps can comment later. High rates of respiratory illness have been found among the firefighters, a group well recognized to be physically fit prior to this exposure.

Some of our patients, once away from Lower Manhattan, have noticed a general improvement in their symptoms, but find that exposure to cigarette smoke, vehicle exhaust, cleaning solutions, or other airborne irritants provokes reoccurrence of their symptoms, in ways that they never experienced before September 11th. Not all who were part of the effort at or near Ground Zero developed persistent respiratory problems; some are more susceptible to the effects of such exposures than others. The difficulty is, we have no way to predict who the susceptibles are. It is very important that, in addition to preventing further exposure to irritants as much as possible, treatment with appropriate medications be instituted as quickly as possible, to prevent these conditions from becoming lifelong, disabling illnesses.

In the past 2 months, we have seen similar respiratory problems

emerging among some of the office workers who returned to buildings situated in the periphery of Ground Zero, especially those located downwind from the debris pile and the fires which were actively burning until December. For most, the symptoms of eye, nose, throat, and chest irritation are transient and not of serious concern. But we have patients with new onset asthma since their return to work in nearby buildings - people who were never previously asthmatic. Fortunately, most of my patients report that their symptoms are generally improving, now that the fires have for the most part been extinguished and the airborne irritant burdens have decreased.

A clinical feature, which surprised us in its frequency and intensity, is the degree of psychological distress among the early responders. Many of our patients who came to us for respiratory problems also reported persistent flashbacks of images and sounds of human trauma and horror they had witnessed, especially early on. Police officers, construction workers, and others have had sleep difficulties, depression or irritability, and many had difficulty controlling their tears whenever reminded of what they had seen, even months after the events themselves. The group debriefing sessions that many participated in at the site was simply insufficient to help such individuals resolve the effects of this experience on their emotional well-being.

To address the specific issue of exposure to asbestos at and near Ground Zero, it is important to note that asbestos has been found in the debris at the site itself and in settled dust on surfaces in nearby buildings. Fortunately, the concentration of asbestos fiber in outside air is low, and poses a correspondingly low risk of disease. For those who work at the Ground Zero site itself, respiratory protection to prevent inhalation of asbestos fiber is necessary, and the use of such respiratory protection is the current policy for workers at the site, although compliance can hardly be described as universal. A special group at increased risk for asbestos-related illness (twenty or more years from now) are the workers engaged in clean-up operations in offices and residential buildings near the site. For the household resident or office occupant whose exposure during the cleaning of settled dust is brief, there is a very low increase in risk of illness, even if the wrong methods are used. Such risk should be avoided, and Dr. Landrigan will likely address the special risk for children in such settings. The risk to unprotected building service workers, however, who perform dust-disturbing tasks day in and day out for perhaps months is of much greater magnitude. This group requires training and protection. Many are hired off the street, are not English speaking, and are among the most vulnerable of workers. That they should have been permitted to be exposed to asbestos dust in this fashion is a public health failure.

From the perspective of what needs to be done now, our clinical experience, taken together with what has been learned from the study of the NYC firefighters, points to the need for developing a medical surveillance program for those who placed themselves at risk in the course of their efforts--whether as employed workers or volunteers. A registry of those who were present at or near Ground Zero must be established as quickly and comprehensively as possible. Medical examinations, to identify persistent respiratory, musculoskeletal, and psychological conditions should be made available to all who were there, and treatment should be initiated where findings warrant it. The longer treatment is delayed, the more difficult treatment becomes, and the less successful the clinical outcome. If resources are made available, a consortium of medical institutions under the guidance of

occupational/environmental medicine expertise can be established, working in coordination with the appropriate government agencies, to provide clinical evaluations and treatment programs. I am confident that we would receive full cooperation from relevant employers and labor organizations to facilitate the development of the registry and the clinical surveillance program itself. The many workers and volunteers who have given so much of themselves deserve no less.

Thank you, and I will be pleased to answer questions.

Statement of Marilena Christodoulou, President, Stuyvesant High School Parents' Association

On behalf of the six thousand parents at Stuyvesant High School, I want to thank you for holding this hearing on a matter of great concern to our community.

Stuyvesant High School is an academically excellent school for which each student must take a competitive examination in order to gain admission. Approximately 20,000 students take the Specialized Science High Schools' entrance examination for the 750 available spaces at the school. It is the most competitive school in the New York City Public School System and arguably in the country.

The school, located four blocks north of the World Trade Center, was heavily impacted by the events of September 11th. The 3,000 students and 200 staff members were evacuated in the middle of a cloud of toxic dust and debris as the second tower was collapsing. Almost immediately, the school building was commandeered for use by rescue and recovery agencies and personnel.

The Board of Education (BOE) reopened the school on October 9. We were the first school in the Ground Zero area to return to its building. Some of the remaining six schools have only returned last week and one school, PS 89, has initiated legal proceedings against the BOE seeking an injunction against the return. The goal of our Parents' Association (PA) has been to ensure that the return to Stuyvesant would occur only when the streets were safe for walking and the building was safe for occupancy. Our single most important concern is the issue of air quality--both inside and outside the school--specifically, the possible presence of airborne contaminants and related potential adverse health effects. Unfortunately, it is my opinion that the return to Stuyvesant was premature and that environmental conditions in and around the school continue to pose a potential threat to our children's health and well-being.

As the inside of the school tested positive for asbestos, the BOE conducted an asbestos abatement prior to reoccupancy. We were encouraged by the fact that the BOE's cleanup should have taken care of not only asbestos, but also all other particulate contaminants. In addition, as a result of negotiations with the PA, the BOE agreed to undertake environmental sampling inside and outside the school (which continues to this day). Results are reviewed by H.A. Bader Consultants, Inc., the PA's hired environmental engineers, and by the PA Environmental Health & Safety Committee.

The excavation operations and the few remaining fires at Ground Zero continue to release a variety of contaminants into the Lower Manhattan air. These contaminants, all of which are associated with potential adverse health effects, include asbestos, lead, crystalline silica, dioxins, carbon monoxide, diesel and gasoline exhaust, PCB's, heavy metals, and benzene and other volatile organic compounds. In addition, several hundred trucks a day carry pulverized debris and steel girders coated with remnants of asbestos fireproofing from Ground

Zero past Stuyvesant to the waste transfer barge operation located immediately adjacent to the north side of the school on Pier 25. This is the main debris removal operation from Ground Zero. Additional contaminants are released into the air as loads are transferred from trucks to barges. Diesel emissions from the many trucks and cranes at the barge are another source of contaminants.

Our experience since returning to school has been and continues to be problematic. Our children are getting sick. We are also concerned about the possible delayed health effects (like cancer) 10-20 years from now from exposure to the chemicals in the air.

contaminants are entering the school

Our goal is to prevent contaminants in the outdoor environment from entering the school and affecting our children. The primary route of outdoor contaminants into the school (assuming windows and doors are kept closed) is through the ventilation system. The main defense against contaminants is the filtration in the ventilation system. To date, the BOE has failed to take adequate measures to protect our children. Despite repeated requests from the PA, the BOE still has not cleaned the ductwork of the ventilation systems. After months of stalling, the BOE finally upgraded the filters at the end of January. Although these replacement filters provide an improvement in efficiency, they still do not provide adequate protection, according to evaluations by two independent professional ventilation engineers working with the PA.

Results from environmental sampling conducted by the BOE demonstrate that, on more than 50 percent of the days from October 9, when our children returned to school, to February 1, measurements of respirable particulate matter (PM2.5) inside the school have exceeded EPA guidelines for children. These particulates may pose a greater danger because they may contain a mixture of toxins. Levels of lead dust in excess of regulatory limits were found inside Stuyvesant on several occasions in December, January, and February.

the barge operation is a main source of contaminants

It is clear that the close proximity of the barge to the school is putting our children at a greater risk of exposure to toxic contaminants. The PA's environmental engineer has measured and compared airborne concentrations of particulate matter at Ground Zero and on the north side of the Stuyvesant building, and found the particular matter to be higher at Stuyvesant. As the north side of the school faces away from Ground Zero and towards the barge operation, the only reasonable explanation is that we have elevated levels of particulates coming from the barge/truck operation. The PA expert also reports that levels of particulate matter at Stuyvesant have consistently been double the levels at Barclay Street, one block from Ground Zero.

On several occasions, the EPA notified the PA that, weeks earlier, it had monitored high levels of certain contaminants in outdoor air at its monitoring station, between the school and the barge, in excess of EPA regulatory limits. These contaminants included asbestos, tetrachloroethane, and isocyanate. Unfortunately, the EPA has not been monitoring the latter contaminants on a regular basis nor is it monitoring and disclosing the full array of possible contaminants. Further, there is no system in place for proactive notification of the residents, workers, and students in the area to enable them to take protective measures (like staying at home) on days when levels of contaminants in the air are high.

Carting of the Ground Zero debris material to the barge constitutes an unacceptable risk to our children and to the surrounding community

along the truck route. We are in the unique position to observe the truck and barge operation, and we can report to you that, despite assurances from government officials, the trucks are not always adequately covered; on cold days the debris cannot be hosed down to prevent the release of dust; and the levels of visible dust in the air and on the pavement are high.

To date, government agencies have been unwilling to either relocate the barge operation to a less damaging site or to take effective measures to protect the community. There was discussion to containerize the debris at Ground Zero prior to trucking them to the barge; to install particulate traps by the barge; and to use low-sulfur fuel for the trucks and the cranes. To date, none of these measures has been implemented.

Even simple measures such as halting barge operation on below-freezing non-hose down days, rerouting trucks from Pier 25 to Pier 6 during the hours when school children are outdoors, and directing trucks hauling loads with high dust content to Pier 6, have not been implemented.

There are 4,500 school children, some as young as 4 years old, within two blocks of this barge operation. We are at a loss to understand how the Government could locate a toxic dump right next to a school in the middle of a residential community. The BOE has taken no effective action to have the barge relocated, or to ensure its operation in an environmentally safe manner.

In summary, our children are exposed to three sources of contaminants: the air inside the school, the toxic composition of the Ground Zero debris trucked and dumped at the barge, and the diesel emissions and combustion byproducts generated by the trucks and the cranes.

incidence of illness among students and staff

Since the return to school on October 9, a number of students and faculty have reported and exhibited clinically diagnosable symptoms of illness. Many parents report that their children have experienced unusual rashes, nosebleeds, coughing attacks, and chronic sinus and respiratory problems, including new onset asthma and chemical bronchitis. Parents have reported to us several emergency room visits. It has been reported that several custodians have chemical bronchitis. Since the return to Stuyvesant on October 9 through December 14, at least 11 students have left the school due to air quality problems. These students, who will not be allowed to return by the BOE, have chosen to leave one of the most prestigious public high schools in the Nation, and to forfeit a public educational opportunity that essentially cannot be replaced.

Several faculty members have left or taken sabbaticals for health reasons or medical concerns. The teachers' union has filed a grievance over environmental conditions at the school. The National Institute for Occupational Safety and Health (``NIOSH''), a branch of the Centers for Disease Control, has begun an investigation of environmental conditions and health effects among teachers at Stuyvesant (and other Lower Manhattan locations). However, NIOSH can only investigate the health impact on workers and has no jurisdiction to conduct an evaluation of our children. Neither the BOE nor the NYC Department of Health have conducted an epidemiological study of the students. The incidence of student illness cannot be adequately characterized based only on attendance rates and visits to the school nurse's office.

Stuyvesant's student population is very diverse. Many of our students come from first and second generation non-English speaking

immigrant families. We are concerned that many of these families do not have the wherewithal to seek early medical care. Dr. Stephen Levin, of the Mt. Sinai Selikoff Center for Occupational and Environmental Medicine, has advised us that early detection and treatment of respiratory illness is critical in terms of preventing such illness from becoming chronic. (I would like to take this opportunity to thank Dr. Levin for his help during this period).

In conclusion, these developments call into question any unequivocal assurances from government agencies, including the EPA and the BOE, about the health and safety of our children.

immediate action is needed

The following courses of action should be implemented to protect environmental quality and public health:

(a) Barge Operation.--The truck/barge operation on Pier 25 should be relocated to an area where there is less residential and educational impact.

(b) Ventilation Protocols.--The Government should immediately issue protocols for proper preventive measures to be taken by schools and other institutions in the area with regard to installation of protective air filtration and cleaning and operation of ventilation systems.

(c) Cleaning of Buildings and Enclosed Structures.--The Government should mandate regular proper cleaning (i.e., wet-cleaning and HEPA-vacuum) of building interiors and other enclosed structures in the area, including foot-bridges such as the one outside Stuyvesant.

(d) Cleaning of Streets and Sidewalks.--The Department of Sanitation, as well as entities such as the Battery Park City Authority, should be required to regularly wet-clean the streets and sidewalks in the area, as it is necessary for dust suppression.

(e) Environmental Monitoring and Notification.--The Government should take action to ensure complete environmental testing, both indoor and outdoor; full and timely disclosure of results; and immediate and full notification of elevated levels of contaminants to residents, workers, and students in Lower Manhattan.

(f) Monitoring of Incidence of Illness and Medical Coverage.--The Government should assume responsibility for implementing a centralized and coordinated effort to monitor and track incidence of illness among residents, workers, and students in the area. A central registry of all residents, workers, and students who have been exposed to contaminants as a result of the September 11th attacks should be established. The Government should assume responsibility for early detection and medical treatment of illness related to the World Trade Center disaster. Also, in my opinion, a dedicated fund should be established to pay for medical costs associated with any future health problems of registered individuals as a result of WTC chemical exposure.

Thank you for the opportunity to address you today.

Statement of Julie Hiraga, Teacher at PS 89 in Manhattan Representing the United Federation of Teachers

Good morning, Chairman Lieberman, Senator Clinton and members of the committee. My name is Julie Hiraga. I am a second grade teacher at PS 89 in Manhattan and am here representing Randi Weingarten, president of the United Federation of Teachers. Thank you for this opportunity to testify on the health issues that concern those of us who live and work in Lower Manhattan.

The brutal attack on the World Trade Center on September 11th was a trauma we are all still learning to overcome, but slowly we are trying

to return to normal. At PS 89, one of seven schools in the immediate vicinity of Ground Zero, the teachers and paraprofessionals quickly led children out of harm's way even as the Twin Towers fell and smoke and debris filled the air. Miraculously, not one student was injured or lost in the attack.

Following the disaster, our schools were relocated to other sites, and some were moved yet again. For the children in PS 89, our two moves took their toll, emotionally and educationally. The adjustments were especially disruptive for students who had to take State tests in reading and language arts. Unfortunately, children did not start getting counseling until January. Still, the teachers have been doing their best to keep students calm and focused on learning.

This has been a very frightening time for all of us, but the teachers of PS 89 want to return to our normal routine. Right now, we are scheduled to go back to our home school on February 28, and although there's a lot of excitement and optimism, there's also some anxiety about safety. Teachers are concerned about having to keep windows closed and not having an outdoor play space for the children.

Also, the school is on the truck route for debris removal. These huge trucks emit diesel fumes and their cargo throws a lot of dust in the air. Teachers are worried about the long-term impact on their health and wonder if symptoms may not emerge for some time.

Parents, too, are worried about air quality and health issues and we wonder how that will affect student enrollment. Right now, we have only half the students we had before Sept. 11 because parents have moved or withdrawn their children. Now parents of about 30 more students have applied to withdraw their children when we go back to our building because they are concerned about health and safety. The problem is compounded when children hear some classmates talk about their parents' worries and become fearful.

Having our union as a watchdog has helped allay some of those fears. The UFT's two industrial hygienists and its consulting physician made presentations to our staff and made sure that our questions were answered. They reviewed all the air-testing data and assured us that they will continue reviewing the reports. They said that air testing and sampling of a number of contaminants that could prove harmful to students and staff will continue on a regular schedule, both inside and outside every affected school.

The union's representatives have also been very responsive to our concerns and needs. They explained what was being done to control the dust, such as watering down the trucks and installing matting under all exterior school doors to hinder dust seepage. They helped our school get a new, more efficient filtration system and a new HEPA vacuum for our custodial staff. They even sent us snacks and towelettes, and that gave us a real morale boost when we needed it.

We've also had a chance to see what has happened at the other schools that reopened. Stuyvesant High School was the first to reopen on October 9. Teachers in my school followed events there very closely. Stuyvesant is further from Ground Zero than PS 89, but the fires were still burning when students and staff returned. Many of my colleagues wondered if the air was safe, even though experts who reviewed the sampling data tried to reassure everyone.

Since some staff and students at Stuyvesant complained of respiratory problems, the union asked the Federal Government to conduct its own evaluation. As a result, on January 29 the National Institute for Occupational Safety and Health (NIOSH) began the first survey comparing staff symptoms at Stuyvesant High School with those at a high

school out of the affected area (Fiorello LaGuardia High School in midtown Manhattan).

We also saw that the union's experts were not content with acceptable facts and figures alone. They conducted on-site visual inspections of all the affected schools to make sure they were properly cleaned and prepared for reoccupancy. A good example is what happened at the High School for Economics and Finance, which was had been scheduled to reopen on January 30. Both the monitoring data and a preliminary inspection showed that everything was ready. But then additional work was done, releasing new dust and debris. Because union representatives made a follow-up visit on the Sunday before the scheduled reopening, they saw these new potential hazards and kept students and staff from moving back until the board cleaned the school again.

In the meantime, our sister school, IS 89, reoccupied the top two floors of our shared building on January 22. It is doing well, which is encouraging. I also hear that the staffs at PS 150 and PS 234, which had many of the same concerns we had, are glad to be back in their own buildings.

So to sum up, there are lingering concerns about the our students' psychological and educational welfare, as well as about parental reactions. All of us at the school have had concerns about air quality and other health hazards in the aftermath of September 11th. However, the independent monitoring and involvement of the union's health and safety experts has helped reassure us.

Thank you.

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Statement of Bernard Orlan, Director of Environmental Health and Safety, New York City Board of Education

Mr. Chairman, Ranking Member Voinovich and Senator Clinton, I am happy to appear before you on behalf of Chancellor Harold O. Levy and the New York City Board of Education. We appreciate this opportunity to speak about how the events of September 11th affected public schools in the area of the World Trade Center. My name is Bernie Orlan and I am director of Environmental Health and Safety for the New York City Board of Education.

As you know, last September 11th, we were forced to evacuate a number of schools in the downtown area. While this has been noted numerous times, it is worth pointing out again that this evacuation was accomplished without a single injury--either to a teacher or a child. Teachers and other staff kept their charges safe. Indeed throughout the system, teachers, principals, assistant principals and support staff worked tirelessly to get children home safely and in the aftermath of that day have helped our students get back to the business of learning.

In the days following the disaster, many of our school buildings were used by various agencies including FEMA and the city's Office of Emergency Management for rescue and ultimately, recovery operations. Other school facilities were used by the Red Cross as emergency shelters. Once permission was granted by the city to normalize activity from 14th street to Canal Street and areas east of Broadway, schools in this area were tested for particulate dust, asbestos and other compounds including carbon monoxide and carbon dioxide. We also established baseline levels for general air quality. The results of these and other tests verified that the buildings were safe for children and staff to return.

This left us with seven schools contained in six buildings that could not immediately be reoccupied. These included two high schools

south of Ground Zero and one high school, one intermediate school and three elementary schools north of Chambers Street, which is north of Ground Zero. In all, more than 5,000 students were displaced.

Four schools were being used by emergency workers and agencies. Once these buildings were turned back to the Board of Education jurisdiction, we began exhaustive environmental testing, beginning with tests for asbestos debris. Very little of this was found. Nonetheless, the decision was made to clean each school as if it were contaminated. Following the strict AHERA protocol designed by independent monitors certified by both NYS Dept of Labor and the U.S. Environmental Protection Agency, teams of approved asbestos abatement handlers began a top-to-bottom cleaning, first by HEPA-vacuuming and wet wiping the buildings. Following the cleaning, the buildings were retested and found to be clear of contaminants that would have come from the collapse of the World Trade Center.

Just as the teachers and staff safeguarded the children as they ran from their schools, it is our duty to safeguard them on their return.

Before the schools could reopen, a battery of environmental testing was performed in and around each school. These included wipe and air sampling for asbestos, respirable particulate concentrations, mercury, PCBs, silica, fiberglass, hydrocarbons, dioxins, metal and cyanides. I have provided a summary of these test results as an addendum to these remarks. For the record, in and around the schools, we have not found any of these materials in any concentration known to be hazardous. While we expect to find background levels of some of these materials in the air--in particular respirable dust--since mid-December when the long-burning fires were extinguished, in daily tests, we found all of these tests to show these contaminants to be absent or on rare occasion, present in quantities that measure for the most part below conservative safety guidelines.

At this point, only PS 89--which shares a building with IS 89--and the High School for Economics and Finance, have yet to return to their buildings. With the return to their home sites, we take a three-pronged approach to safeguarding the physical health of our staff and students. At every school, we perform more than 100 separate air tests a day. We are also sampling over 24-hour periods, in order to collect and examine all particulates and we continue to provide periodic environmental surveillance for the contaminants of concern. Barrier mats at school entrances help prevent people from tracking debris into the school. All ventilation systems were inspected and upgraded to enhance their efficiency to capture the finer dust particles. In addition, medical and metal hygiene staff are located at each school to provide assistance and documentation as necessary.

In conclusion, we have done everything we can do to ensure that our students are learning and our teachers are teaching in a clean and secure environment. We will continue to monitor their environment and will continue to share all the information we collect with parents, their environmental consultants, the unions and the public. We will continue to work diligently and tirelessly for the health and safety of our community so that they can continue to focus on our overall mission of teaching and learning.

I am happy to take your questions.

Statement of Philip Landrigan, M.D., M.Sc., Chair, Department of Community and Preventive Medicine and Professor of Pediatrics, Director, Center for Children's Health and the Environment, Mount Sinai School of Medicine

Mr. Chairman and members of the subcommittee: My name is Philip J. Landrigan, M.D. I am a pediatrician, chairman of the Department of Community and Preventive Medicine and director of the Center for Children's Health and the Environment of the Mount Sinai School of Medicine. A copy of my curriculum vitae is attached to my testimony. Thank you for having invited me to testify before you today.

I will focus my testimony on the impacts of the September 11th World Trade Center attacks on the health of children.

demographics

On September 11, 2001, 46,000 children ages 0-19 resided in Lower Manhattan below 14th Street. Approximately 11,000 of these children were under the age of 5 years, and 3,000 lived within a half-mile radius of the tower. Twelve hundred children were attending the three primary schools closest to the World Trade Center (P.S. 89, P.S. 150, and P.S. 234); 300 children were in attendance at I.S. 89; and 4,000 children were at Stuyvesant High School, the Leadership High School and the High School for Finance. We estimate that 1,700 women in Lower Manhattan were pregnant on the morning of September 11th.

exposures

When the twin towers were destroyed, the communities of Lower Manhattan were enveloped in smoke and soot. Women, children and persons of all ages were placed at risk of exposure to dust, debris, asbestos, fibrous glass, products of combustion, volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs) and dioxins. For many weeks last fall and into early winter, these communities were subjected intermittently to the smell of acrid smoke from the long-burning fires. Many offices and apartments were coated with dust that entered those structures through shattered windows or inadequately protected air handling systems.

You have learned much today already about these exposures. In particular, you have been informed of the risks to workers by my Mount Sinai colleague, Dr. Stephen Levin. To provide further background on the nature of these exposures, I attach to my testimony articles prepared by our group at Mount Sinai that were published in November in Environmental Health Perspectives, the journal of the National Institute of Environmental Health Sciences (NIEHS).

the special vulnerability of children

Children are particularly vulnerable to environmental toxins such as those released into the air of Lower Manhattan on September 11th. Several factors act together to increase children's risk.

- Children live closer to the ground than adults and thus are more like to inhale any materials stirred up from dust.
- Children breathe more air per pound of body weight per day and thus take into their bodies proportionately larger quantities of any toxic materials suspended in the air.
- Children's developing lungs and other organ systems are more sensitive than those of adults.
- Children have more years of future life in which to develop delayed diseases that may result from exposures to dust, asbestos or other toxic materials.

prenatal toxicity

Potential for toxicity in utero affecting the next generation is a further dimension of the September 11th disaster. The possible physical and psychological consequences of the attacks on pregnant women and their children are not known and need to be explored.

To address this issue, researchers at Columbia University Center and the Mount Sinai School of Medicine have developed a joint project

to examine infants born to women who were pregnant on September 11, 2001 and who were either acutely or chronically exposed to the fires and explosions. The acute exposure group will consist of pregnant women who actually were in the World Trade Center or in nearby office buildings at the time of the attacks. The chronic exposure group will consist of women who live and work in the communities of Lower Manhattan. Samples of blood and other biological fluids will be taken from these women to assess their exposures. Their infants will be evaluated at birth and periodically over the first several years of their lives. Outcomes will be assessed.

community health needs

Protection of the health of community residents in Lower Manhattan, particularly young children and pregnant women, requires that we take strong and consistent action on several fronts.

Sound Health Recommendations

The most immediate need in the communities of Lower Manhattan is for scientifically sound, evidence-based guidance (1) about the risks to children and families and (2) about what families can do to minimize those risks.

To formulate health recommendations for families and communities in Lower Manhattan, we have relied heavily on the extensive environmental assessment data collected by the U.S. Environmental Protection Agency, State and city agencies, the Board of Education and private consultants. Although there is always room for more sampling, the aggregate amount of data that has been collected in Lower Manhattan since September 11th is astounding. It represents the most comprehensive environmental sampling that has ever been undertaken in any community in the United States. Most of these data, including all the data collected by governmental agencies, are of high quality and very credible.

In the early weeks after the disaster, while the sampling data were still quite incomplete, we urged prudent avoidance. At that time the smell of acrid smoke hung heavy over Lower Manhattan, especially at night and on days with little wind. Although the actual measured levels of airborne pollutants where below Federal standards, there were intermittent peaks of exposure. Accordingly, we developed recommendations in collaboration with the Ground Zero Elected Officials Task Force and the Manhattan Borough President that urged families to take the following prudent steps:

Limit the amount of time you spend out of doors near the WTC site.

Limit vigorous outdoor exercise and vigorous play by children in the affected area. Both increase the rate of breathing.

For ongoing clean up, use a HEPA vacuum (they can be rented) and a damp mop or rag on floors, walls and furniture to clean your apartment. Brooms stir up dust.

Be sure all air-handling systems in your building are properly cleaned.

Frequently change filters on air conditioners and other ventilation equipment, and run air conditioners on `recirculate' with vents closed.

Use HEPA air filters at home or in the office.

Keep windows closed.

Take your shoes off at the door.

More recently, now that the fires have largely been extinguished, we have continued to monitor health risks to community residents, particularly to children. Much of this assessment has focussed on the

schools and on the question of whether to reopen the schools and playgrounds in Lower Manhattan.

School Health Risks

Based on our review of the most recent data, we are comfortable that the indoor environment of the schools in Lower Manhattan is now clean and safe for children and adults.

The public schools in Lower Manhattan have undergone an extensive array of environmental tests more thorough than any that have been performed in any other New York City public school. Measurements of contaminants (fine particulates, PCBs, dioxins, lead and other metals, asbestos, and volatile organic compounds) have found levels that in virtually every instance are well below applicable standards and background levels. The following paragraphs summarize our interpretation of these data:

PCBs, Dioxins, and related compounds.--These compounds are produced by almost any sort of combustion and are found widely in our industrialized society. If one were to test air and surfaces in any large city, trace levels of these compounds would frequently be detected. The air and surface test results undertaken in the schools in Lower Manhattan found all levels to be either undetectable or far below even the most conservative standards. For instance, the highest reported wipe sample level of dioxin in P.S. 89 was 0.032 ng/M^2. This is nearly 1,000 times below the New York State Department of Health standard.

Fine Particulates (PM2.5). These particles are ubiquitous in a city environment. They arise principally from the combustion of fuel in car, truck, and bus engines as well as industrial exhaust. The U.S. EPA guideline of 40 micrograms/m^3 is based on a 24-hour average. All of the EPA 24-hour average measurements of fine particles near the schools in recent months have been well below this level. In any urban environment, levels of fine particulates fluctuate from moment to moment and day to day. In fact, spot measurements taken at 13th Street, where P.S. 234 was temporarily housed, revealed levels greater than 100 micrograms/m^3. The levels of fine particulates in Lower Manhattan are now more a reflection of background urban air pollution than a result of the continuing WTC clean up. Indeed these levels may increase when the roadways are re-opened to general traffic.

Asbestos. Although ``no asbestos is good asbestos'', the levels of asbestos fibers in the air in Lower Manhattan and in and around P.S. 89 are at background levels for the city, and the levels in the schools are well below the AHERA standard of 70 structures/mm^2.

That said, however, we need to be watchful for the long-term consequences of exposure to asbestos. Almost no data exist on the possible long-term consequences of low level asbestos in early childhood. Causes of malignant mesothelioma have, however, been reported in the grown children of asbestos workers who were exposed to take-home asbestos; among non-working women in the asbestos mining townships of Quebec who were exposed in the community; and among long-term residents of a community near an asbestos-cement plant in Northern Italy.

Last, with regard to the question of playgrounds, we have advised that they be kept closed for the present time, because trucks are still rolling by on the West Side Highway carrying construction materials and potentially asbestos. Although measured levels of particulates and asbestos are below Federal standards, we believe that prudence should dictate that children not play outdoors in immediate proximity to the

highways where these trucks are running.

I have attached to my testimony a copy of a letter that we submitted on February 5, 2002 to the parents, staff and community of P.S. 89. Previously we had submitted a similar letter to the family of P.S. 150. We have provided similar advice pro bono to the New York City Board of Education.

Home Health Risks

Many apartments in Lower Manhattan were heavily inundated by dust on September 11th. Dust entered these apartments through shattered windows and also through air handling systems.

Cleanup of apartments has been very uneven. Some have been effectively and thoroughly cleaned with HEPA vacuums, while others appear not to have been adequately cleaned. Although data are more fragmentary and incomplete than for the schools, there appear to have been apartments and buildings where children may have been significantly exposed to particulates and asbestos.

future needs

Follow up Assessment

It will be very important to continue to follow up vulnerable populations who were present in Lower Manhattan on September 11th and in the succeeding weeks and who were therefore placed at risk of exposure to toxic materials liberated from the fires and explosions at the World Trade Center. Specific follow up assessments that are needed are the following:

Follow up of women in Lower Manhattan who were pregnant on September 11th and their children.--As I have noted above, studies are already underway as a joint endeavor between the Columbia University School of Public Health and the Mount Sinai School of Medicine. They need to be sustained for at least 3-5 years.

Follow up of children residing in and attending schools in Lower Manhattan.--To date, only scattered assessments of children in Lower Manhattan have been undertaken; these initial studies are proceeding under the leadership of CDC, ATSDR, the New York City and New York State Departments of Health. While these studies will provide useful information on the impact of the environmental exposures on September 11th on the health of children in New York, with a particular focus on asthma and other respiratory problems, they have some shortcomings. One problem is that the number of children included is relatively small. Second, the planned duration of follow up is limited--only one year. This will limit these studies' ability to address parent's concerns about the possible long-term consequences of the events of September 11th on their children's health. Third, the studies currently underway are not assessing the impacts on children's mental health of the events of September 11th. Those psychological impacts are expected, however, to be substantial.

A need exists therefore to generate high quality information on the short and long-term health consequences, including the mental health consequences on children, of the events of September 11th.

broad national needs

The events of September 11th and the anthrax attacks that followed underscored the weakness, deterioration and current state of disarray of the public health infrastructure in the United States. They underscore how ill prepared are most doctors and hospitals to recognize, response and care for victims of chemical and biological attack. Most American physicians have never seen anthrax or smallpox, the two agents judged most likely to be used in biological terrorism. Most hospitals do not have plans for the proper isolation of victims or

the protection of their staff.

The lack of preparedness for chemical weapons is equally low. It is sobering to note that in the aftermath of the Tokyo subway attack with sarin in 1995 many secondary cases of chemical poisoning occurred in hospital workers caring for the victims of the attack. These cases resulted because health care workers were untrained and because hospitals had no plans in place for the chemical decontamination of the victims prior to treatment.

A major need exists in the United States to strengthen programs for disease tracking. The extremely sensible recommendations of the Pew Commission on Public Health need to be heeded by health officials at every level of government. Training programs in public health and disaster preparedness need to be established for doctors, nurses, and other health care providers. Hospitals, particularly major hospitals in urban centers, need to be provided the resources and materials needed to develop response plans. These plans need to be closely coordinated with prehospital responders including fire departments, emergency medical technicians, and the Federal Emergency Management Agency.

conclusion

Many questions of profound importance for public health were raised by the attacks on September 11th. Many of these questions remain to be answered, and some will not be answered for decades. The urgent need now is to put in place the studies and to establish the registries and the disease tracking systems that will enable us to answer these questions in the future. New York, Washington and all of the United States need to press forward and not be paralyzed by these terrible attacks. At the same time, we must put in place the prudent safeguards that will prevent further loss of life. Thank you. I shall be pleased to answer your questions.

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Statement of Lee Saunders, on Behalf of Judith Berger-Arroga of District 37, AFSCAME

Thank you Senators Lieberman and Clinton for giving us this opportunity to address your subcommittee. My name is Lee Saunders and I am the Administrator for District Council 37, AFSCME. I am testifying on behalf of the 125,000 members of District Council 37. Our members are the ``Everyday Heroes'' who helped in hundreds of ways at ``Ground Zero'' and elsewhere to keep this city working during the terrible tragedy that occurred on September 11, 2001. I am here today to request that the Federal Government provide funding for appropriate medical testing, treatment and surveillance as well as continued safety training for our remarkable members--city workers who selflessly and valiantly put themselves in harms' way following the September 11th attack to assist the citizens of this great city.

From the moment the first plane hit, our members who work as Paramedics and Emergency Medical Technicians rushed to the scene to begin the rescue effort. Moments after the attack DC 37 lost three members--two EMTs, Carlos Lillo and Ricardo Quinn from Local 2507 and Farther Mychal Judge a Chaplain from Local 299. Scores of other members were injured in the aftermath. Hundreds of other DC 37 members played and continue to play important roles in the rescue, recovery and clean-up effort in and around the World Trade Center.

Our Local 983 Urban Park Rangers were among those who assisted in the evacuation of Battery Park City and the surrounding areas. Our Local 1322 and 376 members who work for the Department of Environmental Protection immediately responded by ensuring that the water supply to fight the huge fires was adequate. Our Motor Vehicle Operators from

Local 983 also responded immediately to address critical transportation needs. As I speak, they continue to haul debris from ``Ground Zero'' hundreds of times a day. Local 375 HAZMAT workers also played a critical role to make certain that chemical hazards were abated quickly. Engineers and Architects from Local 375 have been there from day one to provide technical expertise in overseeing the overall safety of the rescue and recovery operations. Other members of DC 37, such as Local 768 Public Health Sanitarians, Local 420 Mortuary Care Technicians and Local 371 Social Service Workers, have all played vital roles by tending to the health and safety needs of those adversely affected by this terrible event. Until recently, Local 372 School Lunch Aides fed thousands of meals a day to the rescue and other workers at ``Ground Zero''.

Since September 11, 2001, DC 37 has spoken out on the need for adequate funding for the city to address the multitude of concerns of our residents as well as our members who have so valiantly assisted in the rescue and recovery efforts. To aid New York City in its recovery, it is critical that the $20 billion promised by President Bush be made available promptly to enable the city to meet its crushing and immediate economic needs.

More particularly, an adequate portion of the $12 million that Senators Schumer and Clinton have proposed to deal with worker health issues must be specifically earmarked for the medical testing, treatment and surveillance of employees who were exposed to the numerous dangerous chemicals and other toxins in and around ``Ground Zero''. To date, only some of the employees working at ``Ground Zero'' have received baseline medical examinations. Unfortunately, hundreds of others have not. In order to adequately protect the health of these heroic workers, this money must be appropriated in an expeditious and efficient manner. We must not allow unnecessary bureaucratic hurdles and lack of coordination on the part of city, State and Federal agencies to further delay this essential funding. Monies for medical testing, treatment and surveillance of workers should be allocated to the New York State occupational health clinic network, which is well equipped, trained and staffed but presently lacks adequate funding to deal with the huge numbers of workers potentially affected by this disaster.

Failure to allocate adequate funding to address these pressing occupational health issues will unduly burden the city's health insurance carriers and delay the needed medical treatment and surveillance that workers need now. Our government should not place the burden of continued good health on these heroic workers who have already given so much.

DC 37 urges this subcommittee to immediately commit necessary Federal funds to New York City to be used in the following manner:

To fund the Occupational Health Clinics in NYC in order to provide appropriate medical testing, treatment and surveillance.

Develop training programs on safety and health related issues for workers taking part in the rebuilding of the city.

Develop a worker registry to identify workers affected by the 911 attack.

I would like to thank you for your time and will answer any questions you may have.

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Statement of Marjorie J. Clarke, Ph.D., Scientist-in-Residence, Lehman College

My name is Marjorie J. Clarke, Ph.D. I'm a scientist-in-residence

at Lehman College, and an adjunct professor at Lehman and Hunter College, City University of New York. I was the Department of Sanitation's specialist on emissions from incinerators in the 1980s, the author of a book and numerous publications on the subject of minimizing emissions, and I served on a National Academy of Sciences committee on Health Effects of Waste Incineration, co-authoring the NRC publication by that name. I also served on the New Jersey Standard-Setting Task Force on Mercury emissions from incinerators in the early 1990s. My graduate degrees are in geology, environmental sciences, and energy technology. More details about my credentials can be gleaned from the above website.

I thank the Senate Environment Committee for having this hearing on the health impacts on lower Manhattan due to the World Trade Center collapses and fires. I hope that, once you have fully investigated the statements and actions by EPA and other governmental agencies at all levels, investigated the precedents set by earlier EPA actions that have applied to similar situations elsewhere but not in Lower Manhattan, that you will work hard to investigate what happened, why it happened, to make recommendations for improvements in procedures, standards, communications, and research, and to seek to have implemented the many good recommendations that were made at the hearing and subsequent testimony. It's vital to understand that not only are there immediate problems to remediate (clean up, treatment of illness), but there are many more problems to solve so that the next time there is an environmental disaster of any kind, procedures are in place for every aspect of the myriad of issues that result. As important as remediating current problems and preventing new ones, I hope you will publicize everything that you find so that the public understands, and is therefore more likely to support all recommendations.

There are several issues of importance to and lessons to be learned by New York State in the way the environmental agencies have handled air quality issues in Lower Manhattan since September 11th.

First, I concur with the Ground Zero Task Force, that there still needs to be a Cleanup Oversight Agency--I'd go further and say that there needed/needs to be one agency responsible for monitoring health and providing health assistance, and another for environmental sampling, analysis and public dissemination of the results. There was a long delay before all the environmental and health agencies even began to talk with one another about sampling of air quality and accumulated dust. I heard from a high level policy official at City DEP that it took 2 weeks for discussions to start between the head of NYCDEP (Miele) and the local USEPA office. When did DEC begin to coordinate with these other agencies? Can we learn specific lessons from each breakdown in communications and preparedness and devise specific procedures for all to follow in the future?

Second, the WTC collapses and fires actually constituted a brand new, combination type of air pollution source, with aspects of a (1) crematorium (most of the bodies will never be found because they were cremated, and their ashes scattered all over downtown and surrounding areas intermingled with the asbestos, fiberglass and concrete dusts), (2) a solid waste incinerator of unprecedented proportion (described below), (3) asbestos factory (but on a scale thousands of times the size and intensity of what would be found even in a badly operated factory) and (4) volcano (the initial cloud was similar to nuee--ardente--hot gas and dust cloud--in some respects, depositing ash in a large area). There are many toxic, carcinogenic and irritating pollutants, standards need to be rewritten to assess the impacts of

synergy--to protect the public health.

Since this is a new type of air pollution source, with characteristics of a crematorium, a solid waste incinerator, an asbestos factory, and even an ash-spewing volcano, no emissions standards exist and therefore, none of the existing standards for other sources directly applied. Many of us remember the bitter battles between Brooklyn residents and the city over the Brooklyn Navy Yard plant. The emissions from this plant would have been controlled well over 90 percent for most pollutants, and yet we have an incinerator downtown which continues to burn totally uncontrolled. New York State wrote a law banning the construction of this incinerator due to public pressure. Yet the extent of environmental contamination by this incinerator would have paled in comparison to what people have been living with for months. The emissions from the World Trade Center fires were orders of magnitude more than any incinerator, many months have passed, and we have heard very little about a serious attempt to contain the emissions from the site. No attempt had been made to put out the fires (i.e. by cutting off the sources of oxygen from above and the tunnels below.) No procedures have been established to require or do this. Why wasn't there discussion to erect a temporary structure (dome) over the site, and install incinerator emissions controls to clean the air inside the dome so that the workers could do their work in safer conditions and the cleanup around the downtown be finished, once and for all? (Now every time there is a wind, the debris is picked up and dispersed)

Third, there has been a toxic and carcinogenic ``soup'' of air pollutants in the downtown air, constantly being generated by fires, and worse, smoldering embers that incompletely combust thousands of tons of toxic precursors present in the form of fine particles and gases--the perfect recipe formation of dioxins, furans, and similar products of incomplete combustion.

It's hard to imagine a more perfect machine for generating toxic and carcinogenic air pollution. First, there were thousands of tons of asbestos, fiberglass, silica, and very alkaline concrete which was pulverized into various size fractions, but much of which was extremely fine in size. Then there was a tremendous source of heavy metals, PCBs, and acids just from the building's contents (latex paints typically contain mercury--think of the number of gallons there was on the walls). Lead came from volatilization of lead from car batteries, leaded glass in computer screens, lead solder, and lead pigments among other sources. Mercury would have come from batteries, fluorescent lighting, paints, thermostats and thermometers, mercury light switches, and other sources. The same is true of cadmium, chromium, arsenic, and other heavy metals. Most of this was initially pulverized; much of that was then in a form easy to volatilize given a high enough temperature.

In addition there were combustible products and packaging all over the buildings--everything from products and packaging made of paper, cardboard, wood and plastic, including furniture, floor coverings, textile partitions just to name a very few. Fire is easier to start when the combustible matter is a very fine size because the temperature and oxygen can get to all surfaces quickly (try to start a log burning vs. small scraps of paper). The source of heat in the WTC came not only from burning of the jet fuel, but also from the cars underground, as well as from the combustible materials in the building (paper and plastic are highly combustible).

The paper and plastics are not only important because they fed the fires, which volatilized metals and other toxic gases, but also because

under conditions of a few hundred degrees to 1800 degrees Fahrenheit, dioxins, furans, and similar compounds form, de novo, when paper and plastic smolder where insufficient oxygen and temperature is present to burn them thoroughly. In the 1970s, before it was known that municipal solid waste incinerators needed to be designed and operated very carefully to combust the waste thoroughly, some incinerators created tens of thousands of nanograms/cubic meter of dioxin emissions. The stack size of one of these incinerators was a tiny fraction of the equivalent stack size of the World Trade Center air pollution source. In the pile, there was certainly little oxygen, there was a great deal of dioxin precursors (paper and plastics), and the temperatures were perfect for incomplete combustion, so the smoldering would have permitted the generation of an enormous quantity of toxic and carcinogenic organics.

Dioxin is a family of 210 discrete man-made chemicals that are some of the most carcinogenic and toxic chemicals known. Dioxin is the contaminant of Agent Orange that was responsible for birth defects across Vietnam after that war ended. Dioxin adheres very tightly to particulate matter in incinerators, and is stored in fatty tissues in human beings for long periods of time. Dioxins are created in large quantities in poorly designed, uncontrolled incinerators, when products such as paper, cardboard, wood are incompletely burned with such substances as PVC plastic, benzene, and other chlorinated ring structures. The Trade Center was full of fuel for such incomplete combustion. The optimal temperatures for formation of dioxin are roughly between 400 to 1800 degrees Fahrenheit. European dioxin emission standards from an incinerator with a small stack (as compared with the area of Ground Zero) are 0.1 nanograms (billionths of a gram) Toxic Equivalents per cubic meter of emission.

The finer the size of the particulate matter, the greater that amount of volatilized heavy metals, dioxins/furans, and acid gases that can condense from the air and adsorb onto the particulate surfaces (because the surface area of the particulate is so much greater). Also, the finer sizes of particulate matter, laden with toxic and carcinogenic substances, can evade the body's coughing mechanism--the cilia--all the way down to the alveoli (air sacs) where they can reside for the long-term. The longer the fires burned, the greater was the source of volatilized metals, organics, and acids. The fires burned and smoldered for at least 100 days; a decision was made on some level not to attempt to suffocate them (i.e., blocking off all the sources of air from above and below). Because the decision was made not to contain the site, every time we have a heavy wind, the dust that is still all over Lower Manhattan is kicked up and spread around more. The city's meager attempts to wet down the streets certainly resulted in some of the asbestos/fiberglass/toxic and carcinogenic dust to be washed out into the harbor via the storm sewers (doing unknown damage to ecosystems there), but much of the dust remained in place, just to become airborne again once the water had evaporated. The city should have been applying a ``wet-vac'' technology to collect the dust so that it could be brought to a hazardous waste disposal site.

Fourth, there are a few types of air quality standards----

(1) Ambient air quality--mostly irritants (SO_2, NO_x, CO, O_3, particulates) from cars,

(2) Occupational exposures (a wide range of pollutants, 8-hour/day exposure), and

(3) Emissions from point and non-point sources (as measured in the stack or tailpipe).

(4) There are just a few standards for hazardous air pollutants, which cause health effects with far lower doses (ppm, ppb) than the criteria air pollutants for which there are ambient air quality standards. Most toxic and carcinogenic air pollutants are not regulated under ``NESHAPS'', and there has been decades of delays in standard-writing for other pollutants. This needs to be rectified soon, before we face something like this again.

The shortcoming of ALL these types of standards is that they were calculated by considering the effect on human health and the environment (i.e., the health of ecosystems) of only one pollutant at a time. If the air contains 2, or 5, or 500 discrete organics, heavy metals, acids, each of which has its own toxic and carcinogenic properties, but every pollutant is below the individual standard levels, then the Government points to that and says that the air is safe. But is it? The Government hasn't written standards for combinations of pollutants, so it considers the air to be safe if all standards, as currently written, are met. It's common sense that elevated levels of five pollutants is worse than one. It's also common sense that when there are widespread complaints of symptoms ranging from headaches and coughing to new onset asthma in marathon runners, and when everyone who entered into areas a half mile away and more from Ground Zero could smell the pollution, the air has not been ``safe'' for everyone. The additive effects of multiple pollutants need to be considered in assessing evacuation zones, public and health measures. Furthermore, two or more pollutants can interact with one another and produce impacts that are significantly more than the additive effects. Research has shown that inhalation of both asbestos and cigarette smoke produces several times the effect of either one alone. When 1+1+1 does not equal 3, but equals 30, this is called synergy. The Mt. Sinai Environmental Sciences Laboratory, which pioneered research into the health effects of asbestos, has found that those exposed to asbestos and who smoke, have not twice but 80 to 90 times the probability of suffering from asbestos-related diseases such as lung cancer, mesothelioma and asbestosis.

Despite the fact that the air was still so full of contaminants that everyone could smell ``it'' many blocks from Ground Zero until the end of November, all three environmental agencies stated that nothing was wrong with the air at the City Club's forum on October 26. Their basis is that each individual pollutant is below action or standard levels ``most'' of the time. But it is clear that a large number of pollutants are significantly elevated above background levels. I received an email from Dr. David Cleverly, dioxin expert at USEPA, that dioxin had been 50 times normal background levels, but not as high as actionable levels most of the time.

But EPA's website says that ``most of the air samples taken in areas surrounding the work zone and analyzed for dioxin have been below EPA's screening level, which is set to protect against significantly increased risks of cancer and other adverse health effects. The screening level is based on an assumption of continuous exposure for a year to an average concentration of 0.16 nanograms per cubic meter (ng/m^3)'', which is 60 percent higher than incinerator emission standards at the stack exit in several European countries. Twelve days after the attack, ambient concentrations of dioxin were 0.139 ng/m^3 at Church and Dey just east of the site, 0.16 and 0.18 at Barclay and W. Broadway just north of the site, and at Broadway and Liberty, levels were at the 0.1 level. No measurements were taken northeast of the site, which would be downwind most often. The

temperatures of the debris have also continued to be sufficient to vaporize many toxic heavy metals, such as lead, cadmium, chromium, arsenic, mercury, to mention just a few of the many that have surely been emitted in large quantities from this uncontrolled incinerator. I, myself, could smell the metals in the air while I was at the Municipal Building for a meeting in early October. My colleague, and medical waste incinerator expert who wrote the city's Medical Waste Management Plan in 1991, Wally Jordan of Waste Tech, remarked that he smelled chlorinated organics when he went to the site around that time. From what I have heard, the temperature of the pile has been within this temperature range for much of the time since September 11th, so the emissions from these fires could easily be similar to a number of uncontrolled incinerators.

Only recently did EPA put any dioxin data at all on its website, and there is no mention of background or action levels for dioxin or any other pollutant. Many heavy metals have not been listed on the websites. Background levels refer to what is loosely considered to be ``normal'' levels of any given pollutant in the atmosphere. But what does it mean if dioxin plus hundreds of discrete substances including asbestos and several other toxic and/or carcinogenic organic compounds, heavy metals, silica, acids and other gases and particulate matter are elevated, or even many times background levels, and are borderline actionable? Doesn't it seem likely that breathing air in which many toxic or carcinogenic pollutants are borderline actionable is worse for public health than breathing air in which only one pollutant is borderline? Yet standards assume the impact on human health is from only one pollutant. Is it protective of public health to look at each pollutant one at a time, ignoring the additive effects of inhaling each of several pollutants? Can we assume that the impacts on human health is only the additive effect of the concentrations of each pollutant, or might there be synergistic interactions between some of these compounds that increase the impacts further? Since ambient air standards are for individual pollutants, it is imperative that research be done to assess the impacts on public health of combinations of pollutants. Standards need to be rewritten as well to assess the impacts of synergy. The environmental agencies at all levels need to become more expert in evaluating the health and environmental effects of various mixtures of pollutants. Based on this information EPA should rewrite its air quality standards to assess the impacts of various combinations of pollutants so that we will be ready next time to know how to protect the public health.

Fifth, various governmental agencies have applied occupational safety exposure levels for specific pollutants to those exposed to WTC air. But there are several distinct groups of those exposed, and each group has had distinctly different exposures:

Those working on the pile (Variables: the level of emissions have decreased over time as the fires decreased in extent, degree of protective respirator/masks used, amount of time spent).

Those who were caught in the initial horrendous dust cloud, covered in dust, running away, breathing intense quantities of dust deeply into the lungs and ingesting dust particles.

Those living in the area (Variables: level of emissions varies depending on specific location, on weather, and length of time since September 11th; degree of protective respirator/masks used).

Those who cleaned apartments (level of exposure varying with amount of dust in apartment, method of cleaning, degree of protective respirator/masks used, amount of time spent in cleaning).

Those working in the area--8 hours a day five days a week; (Variables: degree of protective respirator/masks used).

Those at risk: children, elderly, compromised immune systems, those with pulmonary problems are more likely to suffer more adverse affects than others for all the above categories.

Handlers of disposed debris: shipments to India, S. Korea--no protection for workers offloading (no knowledge of contents).

Most of these groups of exposed cannot be compared with occupational exposure. Studies of occupational exposure assume 5 days a week, 8 hours a day exposure to adults (healthy males?) What about those who live there, those at risk, those caught in the initial cloud? This requires considerable investigation, and many new standards need to be created to address these different categories of exposure.

Sixth, entrainment of pollutant-laden fine dust is also occurring, as we heard, by loading debris into trucks and barges. There are standards for reducing entrainment of incinerator ash. These involve spraying water and containment in leak-proof, covered trucks. Why aren't we enforcing those standards? Is it because this is not an incinerator? Shouldn't common sense dictate that the closest standards that exist be the ones to be followed in such a case? We heard that ``guys with guns'' enforce covering of trucks--Now. But I had heard from people who lived in the area, that the military had been enforcing the opposite in the first weeks, when pollutant levels were highest, so that they could check the trucks' contents. That the trucks might be covered by leaky tarps now does not negate the exposure to residents and workers of pollutants that were emitted earlier.

Seventh, air quality data has been selectively shared with the public, leaving the public mistrustful. Further, the agencies waited far too long to begin adding monitors to the area. We can only imagine the levels of dioxin, asbestos, heavy metals, acids, other organics, silica, etc. that was in the air while people were running from the area. We shouldn't ignore this impact on their health. On EPA's website, it initially listed only asbestos in air, asbestos in dust and a gross measure of particulate matter in air. After several weeks passed, EPA added PCB and lead. After another few weeks, a few days' individual samples of dioxin were presented. All told, this is maybe 20 pages of information. But in a televised public forum (City Club forum held October 26 and subsequently televised on CUNY TV), EPA said that all of its data was online. EPA repeated this at City Council hearings on November 1 and at State Assembly hearings later in November. Early on, I learned that EPA had 900 pages of data, including a list of heavy metals, dioxins and furans, acid gases, as well as those items listed. But EPA has demanded that the Manhattan Borough President and City Council must file Freedom of Information requests for it or else come to the repository and look at it. I asked for an electronic copy. I was told I was the first one to ask for it, and was told that it would not be possible to email me the data. How could this be, since the data surely exist on someone's computer? The Borough President's office never filed the FOI request (since their policy is not to do so). It is just this kind of secretive behavior that invites journalists or others without scientific training, who do go down to view the full datasets, to quote data selectively. If the data were freely available in a spreadsheet, then academic, environmental, and community institutions could have already started studies. Those who want to conduct analyses are still unable to do so. Considering what is available online, the datasets appear to be thin, with many pollutants missing from the database and with only a few dates sampled for some pollutants. The

first date that dioxin data are available are 12 days after the event. Most data are not available daily. Datasets for many pollutants are not available at all online.

Where was EPA while thousands of New York City residents were exposed to air pollutants from the WTC collapses? The EPA website shows only summaries of data, when they could have made data from September 11th onwards available for Lower Manhattan. If more or earlier data is available online, it's not easy for the public to find. EPA should make its entire air quality archives easily available on its website as well as those from all other sources.

Not only was EPA's secretiveness reprehensible this time, but procedures should be put in place NOW to ensure that should anything like this ever happen again, the environmental agencies would immediately be meeting to coordinate comprehensive sampling and analysis, AND prompt disclosure to the public via the internet of ALL data along with all current and applicable standards as well as background levels for each pollutant.

We also need to conduct research to understand toxic and carcinogenic impacts of multiple pollutants. One method of doing this is by conducting assays using surrogate organisms, to observe the impacts of different pollutant combinations. Tetramitus flagellate is one such organism that has been shown to indicate toxicity of unknown mixtures. Dr. Robert Jaffe, of the Environmental Toxicology Laboratory, http://www.envirolab.com/ has been pioneering work in this area.

Eighth, very little has been spoken about building codes, and how the composition, structure, and operation of buildings contributed to the death toll, and how revision of these regulations is needed to prevent future deaths. When I worked on the 83rd floor of WTC 1 for a couple of years around 1980, we didn't have fire drills very often (I can only remember one, maybe two). When we did have drills, we were told to walk down the stairs to the 78th floor at which point we were told to stay put. That was the total extent of the fire drill. Is that protective of public health? The truth is, the WTC buildings were so tall that they were not readily evacuable. The stairways were not designed to evacuate everyone in a reasonable amount of time. To complicate this further, the Port Authority made announcements to go back to their offices. They did not immediately send announcements to everyone in both buildings to evacuate to the ground floor and leave. Some people who had gone to the first floor returned to their offices and lost their lives. A last point: Firefighters were coming up the same stairwells that the thousands of office workers were using to evacuate. This effectively halved the capacity of the stairwells for evacuation purposes. How many people might have gotten out if they didn't have to wait to enter a stairwell that was reduced to half its original capacity (remembering that some of the stairwells became impassable due to the fires themselves)? How many other tall buildings in NYC have insufficient number of narrow stairwells? How many are not totally evacuated during fire drills? What about those in wheelchairs on high floors? All these questions point to the need to limit the number of floors of new buildings to a size that can easily and routinely be evacuated quickly, assuming that firefighters will need space in the stairwells.

Insofar as construction of future buildings is concerned, attention must be paid to the safety factor chosen for retarding the effect of fire on the building's structural members. The WTC was designed to withstand the impact of a 707 aircraft. But why wasn't it also assumed that the 707 would be carrying thousands of gallons of jet fuel, and

that this jet fuel would cause a fire of sufficient temperature and duration to melt the steel members? This is not a difficult mental exercise, and structural engineers figured this out within a day or so of having watched the floors compact. There is no room for error. If just one floor gives way, because the steel has partially melted, the weight of floors above comes crashing down, and the entire building will collapse, immediately, as we saw. Note that WTC building No. 7 was not even hit by an aircraft, but it also collapsed due to the duration of fire. The structural engineers interviewed said that it would have been possible to put a thicker layer of protective coating on the structural members of the WTC, but it would have cost a little more. How many people would have been saved if the buildings held together for another half hour? We should learn from this disaster. Building codes should be revisited to address all these issues and correct all deficiencies.

Since the City Council's Environmental Protection committee held two days of hearings (November 1 and 8), and the New York State Assembly held hearings in late November 2001, the Senate Environment Committee would be well served by looking at the transcripts and videos of those presentations--particularly those presented by the public.

I'll close by drawing an analogy with the way the environmental agencies are dealing with the public health hazard downtown. In south Florida, where I grew up, in the 1940's, as tourism was quickly growing, the Government kept information about hurricanes secret for fear that too much information would hurt business, particularly the tourist trade. Predictably, south Florida got walloped a couple of times, and then the Government, wisely, decided to make an about-face and become the world's experts on hurricane tracking, prediction, alerts, mitigation and standards for evacuation of the population to protect the public health. They established a world-class center in Coral Gables to serve as the source of information and research. Later, by the time I was six, I was tracking every hurricane's progress on a chart I got for free at the 7-11 store by listening to the radio for coordinates.

We have exactly the same situation here. There is a lot we don't know. The Government wants to protect business and the tourist trade. The Government has kept a great deal of information off limits to anyone for the first several weeks, and lately it has made it difficult to obtain in any usable form. Even worse than this is that we don't know the long-lasting impacts of the initial huge, dense cloud of finely pulverized asbestos and silica-laden dust on those running and inhaling deeply in its midst. We don't know the additive and synergistic effects of combinations of many toxic and carcinogenic pollutants that continue to be emitted from the fires or entrained from the dust as it blows off the rooftops and ledges. Will this exposure to air pollution compromise immune systems, making people more vulnerable to future illnesses or terrorist attacks? On what basis did the Government choose a perimeter for evacuation? On what basis did they rush to reopen the area? Have we learned anything from this experience? Now is a time for the environmental agencies to pull their heads from the sand, make an about-face, coordinate and release all data and interpretive guidelines on the Web. We need to err on the side of caution rather than seeking to go ``back to normal'' at the cost of the public health.

The Federal Government should assist the city by committing its funds and encouraging the Governor to seek additional Federal September 11th grants on an accelerated basis to conduct ongoing, comprehensive

surveillance of symptoms in affected populations, buy room filters for residents, pay for proper indoor and building cleanup, research the acute and long-term impacts on health of highly concentrated combinations of pollutants acting for a short time, as well as elevated levels of combinations acting for longer periods of time.

The Federal Government should write new standards to reflect short-term exposure to high concentrations, as in the initial cloud, as well as synergistic effects of many toxic, carcinogenic pollutants.

We also need to have contingency planning for different types of environmental disasters as this new war against terrorism progresses. We need to actively examine worst case scenarios and plan for them. We need to understand how far to evacuate and for how long. This is the only way to regain public trust. Recalling the hurricane example, and realizing that we may not be finished with terrorism, becoming the world's experts in environmental health disasters and being truly open with the public is the best course of action in the long term.

recommendations

1. To investigate, quantify, substantiate, and publicize any lies, misstatements, unpreparedness, lack of coordination, ineptitude, lack of attention to redirecting staff, or worse that did occur in the days and months since the World Trade Center attack on September 11, 2001. The Ombudsman should investigate all apparent or actual conflicts of interest that might have motivated agency and elected officials to make statements or make decisions.

2. To investigate and come to conclusions on:

(a) the bases for EPA's and other elected and appointed officials' statements as to the safety of the downtown area for reoccupancy, (i.e., what did they know, when did they know it, who did they ask, what agencies did they coordinate with, and on what topics--example: when did EPA first learn about the caustic nature of the dusts from USGS),

(b) the instructions and protective equipment tenants and landlords were given for cleaning indoors, by which agencies, and the agency procedures on which this was based, and

(c) the lack of attention to indoor air quality by EPA and the agencies for months after the attacks despite precedents of EPA having done so in other similar instances. Knowing this information should help in designing.

(1) Improved procedures for intra- and inter-agency communications in the event of environmental disasters.

(2) Criteria for evaluating whether an incident, be it a natural or man-made disaster is an Environmental disaster, and procedures for their use.

(3) Procedures for immediate, multi-pronged, and continual communications of all information with the affected public.

(4) The standards that should be used to protect public health. Per Cate Jenkins memo, the NYC DOH chose a standard many orders of magnitude less protective than the one in one million standard that EPA typically chooses.

3. To issue recommendations on EPA emergency actions in the case of suspected environmental accidents, disasters, releases. Which Federal Agency takes the lead in protecting public health in such a circumstance? How do they coordinate, on what topics, and in what time frame? How fast should they communicate and coordinate with the State and local agencies? How is the responsibility and work to be divided?

4. To issue, publicize and widely disseminate a report combining measures and procedures used to measure all specific pollutants from ALL air quality and dust measurements that have been taken by EPA, other agencies, and private companies since September 11th. It would be helpful if this, and other reports you issue, were available for download, and that data be available in database or excel format that can be used in research (PDF format cannot).

5. To characterize and quantify the extent to which the public's health has been adversely affected (those working on the pile, those living/working in the area, children, elderly, immune-depressed, short- and long-term) by the air pollution from the WTC attacks, or at least make detailed recommendations of who should research this.

6. To seek to make the overall results of extensive medical tests (baseline and continuing) being done on the entire group NYC fire-fighters to become public.

7. To make determine and make recommendations on how much money is necessary to examine and conduct long-term follow-up on all those exposed to air pollution and dusts from the September 11th attacks, and from where the source of funding might come, and seek increased Federal funding to cover these costs.

8. To recommend that the National Academy of Sciences conduct a risk assessment of the public health impacts due to the air pollution caused by the September 11th attacks.

9. To ensure that guidance is disseminated to all physicians and hospitals in the area to look for and properly treat those exposed to WTC air. According to Mt. Sinai February 4, 2002 memo to help physicians determine whether pulmonary symptoms are related to WTC, some symptoms from exposure can begin as late as 3 weeks after exposure or cessation of exposure. If physicians have to be given guidance on these issues, many of those exposed are likely not to realize their symptoms are WTC-related. Why didn't the city, State or Federal government issue this memo in September? Efforts are not being made to locate all those who were exposed and to characterize their exposures and register their symptoms over time.

10. To recommend and publicize specific measures that need to be taken immediately to clean up the downtown area of dangerous dusts and to prevent the continuous reentrainment and spread of these dusts from the Ground Zero area into surrounding areas.

11. To investigate existing EPA standards and procedures to see whether standards required to prevent, control, or remediate environmental contamination in environmental disasters, accidents, or releases were not used to prevent, control or remediate pollution in this case (and why). Example: to prevent the spread of incinerator ash when it is transported from its source to a landfill, Federal regulations requires that the generating (and intermediate handling) facility be enclosed and operated with negative air pressure, that the ash is totally wetted, that trucks transporting ash be entirely containerized and sealed to prevent entrainment or leaking onto the ground, and that receiving facilities operate under similar constraints. Despite the fact that the debris from the WTC has the consistency and many properties of incinerator ash, leaky, imperfectly covered trucks are continuously scattering the debris between Ground Zero and the barge at Pier 25. Why aren't existing protective procedures being used? Steps need to be taken (i.e., legislation) to ensure that in all future environmental disasters, the entire array of existing procedures be canvassed and that the most protective procedures appropriate to the situation be utilized.

12. To develop and recommend what measurements need to be taken in the event of an environmental release, accident or disaster, and how the measuring stations should be deployed and operated. It is unconscionable that data taken early on is still dribbling out from the Federal Government--e.g., Two samples that were taken inside a high-rise apartment and in a gymnasium across from the wreckage of the World Trade Center had a pH of 11.8 to 12.1--equivalent to what would be found in liquid drain cleaner. It is clear that stations were not deployed in concentric rings around Ground Zero were not done, and few of the measuring stations were in the predominant downwind areas. It is clear that many measurements were ``grab'' samples, only for 5 or 6 minutes. Since the wind direction and speed varies, it is necessary to have continuous, long-term samples looking both for long-term averages and for short-term spikes.

13. To recommend measures that need to be taken immediately to remediate the public health impacts resulting from inhalation and ingestion of polluted air. First we need to identify Everyone who was in the area at the time of the attacks, including the pile and enforcement workers, those who have lived or worked in the area, those who have been hired to clean up apartments and businesses. Then we need to get medical histories to construct a baseline (a Registry). The exposure should be quantified, first by location during each day of the pollution period, and then by the type of activities performed--those breathing heavily due to working on the pile, running for one's life, etc. involves an increased exposure due to more forceful inhalation (more air and particles brought deeper into the lungs, allowing the possibility for more to be retained long-term in the lung. This study and ongoing medical examinations and treatments, for all diseases that should arise, should be performed, at Federal expense, for a period of 20 or 30 years.

14. To investigate the procedures underway at Fresh Kills landfill--are they protective of workers, what is the airborne dispersion of dangerous materials. Procedures at the barge should also be investigated; are workers wearing protective gear? Are materials being well-contained?

15. To investigate the disposal and marketing of WTC debris and recyclable steel--has testing been done to quantify whether this is a hazardous waste, and should be transported and handled under those rules? If it is hazardous waste, is the facility that has been selected for the debris, consistent with Federal or State rules? To the extent that scrap steel or other materials are exported to other countries (e.g. steel that has already gone to India and S. Korea), has EPA or any other Federal or other agency advised those on the receiving end about the composition of the materials, or protective handling procedures? This isn't the first time a company or municipality in the United States has exported toxic waste to another country without proper advice or precautions, and it won't be the last. There should be a law.

16. To encourage research into and adoption of more protective building codes (less toxic materials, evacuable buildings, better fire drill and practice evacuations, better, more well-thought out announcement systems during emergencies. It is arguable that many people died in stairwells too small to evacuate everyone, especially since their capacity was reduced by half due to firefighters climbing them at the same time. It is arguable that some died when they heard Port Authority announcements to go back to their offices. Could the buildings be built with fewer toxics?

17. If the U.S. Attorney General's statements can be taken at face value, we can expect worse terrorist attacks in the future. It is not unlikely that any future attacks will involve some degree of environmental contamination. Many scenarios for future attacks would involve some of the same issues as are being dealt with here (indoor contamination, removal, not just wetting of outdoor contamination). In addition to terrorist attacks, environmental disasters can and have occurred in other ways: industrial accidents, natural disasters (e.g., major earthquakes in urban areas, tornadoes, fires, hurricanes). Utilizing my knowledge of geology, it is a 100 percent certainty that major west coast cities will suffer even greater destruction (collapses, fires) than they have already due to larger earthquakes in the future. We just can't reliably predict when. Therefore, many of these recommendations will be useful in protecting public health after future disasters.

18. There are no uniform, justifiable procedures for determining the evacuation of nearby populations after an environmental disaster, therefore, we are woefully unprepared for any environmental disasters in the future. This time, the ``frozen zone'' was not based on specific scientific principles, and neither was the timing of allowing people to return. We should learn from the experience with establishing hurricane evacuation routes, and the procedures taken to order evacuations for approaching hurricanes. As important, it is necessary to develop justifiable procedures for repopulation after an environmental disaster (i.e., the testing that needs to be done, the verification that safe conditions exist).

19. For these reasons, and similar to the decision to establish a National Hurricane Research Center in Coral Gables (when it was realized that we didn't know how to track, predict, evacuate or minimize impacts of hurricanes), we need to establish a permanent Environmental Disaster Research center dedicated to conducting all the research that was needed prior to now to determine and address the synergistic and other impacts on human health of various types of environmental disasters. Examples of research would include investigating the impacts of combinations of pollutants that we have observed in this case. Other areas for research, development, and demonstration would be the measurement technologies for screening for unknown combinations of pollutants, as Dr. Robert Jaffe has developed. This research should then be used to develop new air quality standards to address impacts from combinations of pollutants. Results of the research conducted at this facility would be invaluable to the Congress and those writing air quality, emissions, occupational safety, and NESHAP standards at EPA.

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Attachment 1

[From CorpWatch, February 6, 2002]

Trading in Disaster

(By Nityanand Jayaraman and Kenny Bruno)

world trade center scrap lands in india, indian citizens group protests wtc scrap, potential contaminants in world trade center debris

CHENNAI and NEW YORK--It might seem like a tangent to the tragedy of the Sept 11th attacks: the fate of the thousands of tons of steel that formed the twin towers. As with so many other unwanted materials from the United States, more than 30,000 tons of steel scrap--possibly contaminated with asbestos.

PCBs, cadmium, mercury and dioxins--has been exported to India and

other parts of Asia. Though the risks from the scrap are probably not on the order of the health threats at Ground Zero, the United States nevertheless has the obligation to ensure that toxic contamination from the World Trade Center is not exported to other nations.

mysterious shipments

At least one shipload, onboard a vessel named Brozna, landed in the South Indian port city of Chennai in early January. The scrap was unloaded, as any routine consignment would be, by port workers with absolutely no protection. Two other ships, Shen Quan Hai and Pindos, also reported to be carrying World Trade Center scrap berthed and offloaded their cargo in Chennai. But preliminary investigations failed to reveal documentation linking the cargo to the Trade Center. Reports are vague about another shipment making its way into Northern India through the Western port city of Kandla.

Similar shipments have reportedly reached China, where Baosteel Group purchased 50,000 tons of the potentially toxic scrap. Malaysia and South Korea are also reported to have received shipments. Eventually, most of the 1.5 millions tons of scrap from the cleanup may end up dirtying Asian ports and threatening Asian workers.

Few details are known about who purchased the scrap, but an unidentified Indian trader reportedly bought an undisclosed amount of the World Trade Center debris, and the 33,000 ton shipment onboard the Brozna was collected by Chennai-based Sabari Exim Pvt. Ltd. and removed to the company's facilities outside the city.

Nor are the names of U.S.-based traders who may have exported the shipments to India known. However, two New Jersey companies were among the bidders that won the contract for removing more than 60,000 tons of Trade Center scrap. New Jersey-based Metal Management Northeast, bought 40,000 tons and Hugo Neu Schnitzer, based outside Jersey City, bought 25,000 tons. Schnitzer was reportedly eyeing the Southeast Asian markets, possibly Malaysia, where prices are higher.

public health concerns from tribeca to chennai

In this case, it is hard to accuse the United States of double standards because U.S. safety regulations were trampled in the chaos over Ground Zero. In Lower Manhattan, thousands of rescue workers and residents have been exposed daily to unknown but significant dangers from air contamination. Hundreds of New York firefighters are filing to go on permanent disability, while serious respiratory infections and other chronic health problems afflict area residents, especially children. A few days after the attacks, even President Bush stood on the rubble without protective gear, joining the rest of a city too shocked and too busy to take proper precautions against the toxic cloud over Manhattan.

The steel scrap imported by India and China may not represent the same level of health threat as Ground Zero. But given the amount of material involved, and the short time frame for any decontamination process, it is indeed possible that the steel is contaminated with toxic materials.

In the months after the bombing reports surfaced about the presence of toxic contamination at Ground Zero, including poisons such as dioxins, polychlorinated biphenyls (PCB), cadmium, mercury, asbestos and lead in the debris. What remains in question is whether toxic chemicals have attached themselves to the steel scrap.

There are no safe levels of exposure to cancer-causing substances like asbestos, PCBs and dioxins, and toxic metals like cadmium, mercury and lead. Asbestos, PCBs and dioxins may cause harm even in miniscule doses. Also, like cadmium and mercury, once ingested or inhaled, they

resist degradation or excretion and tend to build up to dangerous levels in the body over the long run.

Insurance companies like American International Group and Liberty Mutual have refused coverage to the demolition contractors charged with the cleanup. The contractors fear that without insurance they will be driven into bankruptcy by an anticipated flood of lawsuits over asbestos, mercury and other toxins released into the air by the collapse of the twin towers and clean-up efforts, according to the New York Times.

not enough information

Contamination of steel scrap is a common concern in the scrap industry. As far as CorpWatch has been able to determine, U.S. authorities have not studied the levels of contaminants in the Trade Center scrap that was exported. If they have, the information has not reached Indian authorities or port workers.

Trade union groups swiftly moved into action when the exports were reported last month, but were hamstrung by the lack of information. ``The Port Authorities tell us that steel scrap is legal. Unless we find evidence of contamination, we can't stop the shipment,'' said S.R. Kulkarni, secretary of the Mumbai-based All India Port & Dock Workers Union.

Nor has the information been forthcoming in the United States. The New York Environmental Law and Justice Project recently filed a Freedom of Information Act request with the USEPA after U.S. public health activists suspected regulatory officials were downplaying the toxic contamination in and around Ground Zero.

However, Chennai-based lawyer T. Mohan says there's enough doubt raised about the safety of the debris to warrant precautionary steps. ``There were talks to declare Ground Zero a Superfund site. That's proof enough for us to be concerned that this consignment may be contaminated,'' he noted.

who's responsible?

Under the Basel Convention on the Transboundary Movement of Hazardous Waste, it falls to the Indian Government to prevent the import of wastes if they are found hazardous. That's because the United States refuses to sign the Basel Convention and is therefore not bound by the treaty. This includes an amendment know as the Basel Ban prohibiting developed countries from exporting hazardous material to industrializing nations like India. But Mohan believes that morally, ``the burden of proving [the waste] is not hazardous rests with the U.S. exporters and U.S. Government.''

Despite a Indian Supreme Court order prohibiting the imports of hazardous waste into India, U.S. shipments top the list of hazardous waste exports to India. Everything from zinc ash, toxic ships-for-scrap and lead-bearing wastes are routinely sent to unscrupulous importers in India. The Indian regulatory agencies, notably the port and customs authorities and the Indian Ministry of Environment and Forests, have maintained their habitual silence on matters such as this that pertain to human health and environment.

``They seem more intent on passing the buck to each other rather than dealing with the problem and hauling in the U.S. Government for negligence,'' says Attorney Mohan.

Steel reprocessing is a dirty business, especially when the steel contains plastic, chemical and heavy metal contaminants. In fact, secondary steel almost always contains some toxic materials. Lower wages and laxer environmental regulations in Asian countries mean that Asian traders and reprocessors can offer better prices for the steel

scrap than their European or North American counterparts. That is one of the reasons why scrap metal is exported to Asia in the first place.

The export of contaminated scrap and hazardous wastes to industrializing countries fits a long-standing pattern of environmental discrimination by the United States. An infamous example is the shipload of toxic incinerator ash from Philadelphia that traveled the oceans for 2 years before ending up on a beach in Haiti in 1988.

In a February 4 letter to the U.S. Embassy in New Delhi, three major Indian trade unions, Greenpeace and People's Union for Civil Liberties blasted the U.S. Government for its ``continued inaction'' in stemming the export of wastes and scrap to industrializing countries. They called it ``a consistent pattern in keeping with USA's tacit, if not active, support for toxic trade.''

``We're totally opposed to the United States and other rich countries using India as a dumping ground for all kinds of wastes and rejects. Such dumping of steel scrap is adversely affecting the major steel plants in our country, apart from causing environment and health problems,'' says P.K. Ganguly, the New Delhi-based Secretary of Centre of Indian Trade Unions.

The way out of the current bind over the World Trade Center scrap is simple, say environmentalists. United States authorities should provide evidence that the scrap lying in India is free of poisonous contaminants. If the it is found to be contaminated, then immediate steps should be taken to return the consignment to the United States.

If, on the other hand, the shipment is found clean, there may be no immediate threat of exposure to toxic chemicals. Even if the scrap turns out not to be dangerous, the question remains: who profits--and who suffers--from shipping valuable steel scrap to be recycled half-way across the globe in India before it returns to the United States in its new incarnation as soup cans or luxury cars?

Nityanand Jayaraman is an independent, investigative reporter based in India.

Kenny Bruno coordinates CorpWatch's Corporate-Free UN Campaign.

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Statement of David J. Miller, Burlington, VT

Military Jet Fuel (JP-4) and Its Possible Implication on Public Health

At this time I know of no other paper that has drawn a broad review regarding benzene, toluene, xylene, hexane and their metabolites with regard to petroleum products like (military) JP-4 jet fuel and the implication to public health now and in the future.

If one reviews the literature on benzene it goes back to the beginning of the 20th century and continues today, however for those parties benzene affected the most, they have little or no idea of its danger or its causation. Their life and quality of health being affected the most.

Some may view this presentation with a meta analysis argument, however my fundamental motive is edification, bringing about dialogue even debate, illuminating issues, establishing proper measures appropriate for a remedy.

introduction

Physicians acknowledge benzene's effect on bone marrow immune system and the CNS, however by taking an analytical approach one could ignore the synergism of the exposure due to a lack of proficiency in occupational and environmental medicine.

To assist in achieving that goal I choose military (JP-4) jet fuel due to its composition and wide use during the 1950's, 1960's, 1970's and part of the 1980's.

background

``During the distillation of crude oil to make JP-3 and JP-4 a wide cut is take of the distillate so as to include both the naptha (gasoline) and kerosene fraction, JP-4 is typically composed of about 50-60 percent gasoline and the remainder is kerosene[1]. Now with almost 50 years since JP-4 being standardized under MIL-F-5624A[1].'' It's clear (with the body of information presented in (ATSDR) Agency for Toxic Substances and Disease Registry Publication Toxicological Profile for JP-4 and JP-7 June 1995, henceforth to be referred to as the profile) a serious balance review must be initiated due to JP-4's composition of hydro-carbons to include (additives) itemized with generic identification, Page 70. Note aromatic hydro-carbons are concentrations in weight percent, Pages 72, 73, 74.

concerns: (the profile)[2]

Page 3 1.3 (How might one be exposed to jet fuel JP-4 and JP-7?) ``Workers involved in making or transporting or in refueling military aircraft that use JP-4 might breath air containing it.''

Page 38 2.4 Relevance to public health ``thus apart from those individuals involved in the manufacturing process, persons living or working near or on a military base would constitute the greatest population at risk for JP-4 and JP-7 exposure.''

To digress, if those concerns apply to JP-4 and JP-7 then similar situations would warrant the same attention due to possible evaporation from petroleum storage tank farms and emissions due to transfer of product JP-4 etc. from point of transport truck, rail or barge without vapor recovery systems.

Although vapor recovery systems are being installed, the question of (past exposure) and those most likely at risk identified in the profile need to be addressed more fully to expand those factors for occupational and residential exposure. Example Machle[3] writes in (Chronic Intoxication), ``This term is applied to poisoning which results from exposure to low concentrations of gasoline vapor for long periods of time; severe acute symptoms do not appear, but minor symptoms of a general nature are manifested a few weeks or months after the exposure has started and become progressively worse, the patient may become disabled in a month or in several years.'' The implications are profound if the exposure is compounded, Goldstein[4]. As Toranosuke Ishimaru[5] articulates here, ``the six occupations noted at a higher frequency among the index cases than in the controls in Table 4 were selected for an examination in more detail of the relation of occupational exposure and A-BOMB exposure (Table 7) note relationship between occupational exposure to benzene or medical x-ray occupations and atomic bomb exposure status; frequency of history of 6 selected occupations. Continuing--in general, the risk was approximately 5 times higher among those with a history of any of these six occupations in comparison with those without. The relative risks in the proximal group and in the distal and non-exposed group were 6.0 and 4.5, respectively.''

Continuing with the profiles concern of risk to handlers we then can review Lindquist, R.[6] ``Our results indicate a three-fold increase risk of developing leukemia for professional drivers who are exposed to petroleum products, i.e., gasoline or diesel and their motor exhausts, our findings support previous work suggesting an increased risk of acute non-lymphocytic leukemia after occupational exposure to petroleum products (3)''. From a public health perspective we can no longer ignore past exposure only because of present and future implication and that impact on society.

To reinforce those concerns of previous risk, Pier Alberto Bertazzi[7] reports, ``the most distinctive pattern of increased cancer mortality seemed to be the one observed in association with moving operations. Significant excess mortality from all cancers, lung cancer and brain tumors was noted.'' (Continuing further) ``The greatest opportunity for exposure to volatile hydrocarbons occurred during the loading operation, which required the manual connection of all filler pipes to the trucks and train tanks and manual measurements of product levels in tanks.''

``In addition, workers were exposed while staying at the filling platform especially during the hot season, to volatiles coming from open tanks of standing trucks, and trains.''

Now there's an obligation to ask at what levels do these hydrocarbons have a genotoxic effect on those exposed? Ralph I. Nilsson[8] established these thoughts. ``The results at different exposure levels indicate that even a low level exposure to benzene possibly in combination with other compounds in gasoline, may cause a genotoxic effect (Table 111, V.) as both tests measure damage to DNA. Our findings indicate a genotoxic effect at benzene exposure levels of around 0.1 ppm.''

The before mentioned citations demonstrate the danger to individual workers; however we must readdress (the profile's) community concerns with more clarity. This can be accomplished by reviewing E.G. Knox[9]. ``The apparent hazards included oil refineries oil storage and distribution depots, railway lines, and other industrial sites. Effective ranges extended as far as 5km from the sources. This suggested a hazard related to large scale uses of fossil fuels, especially petroleum, operating through leakage or evaporation or combustion, perhaps all three.''

Benzene, toluene, hexane, xylene and lead have been identified in (the Profile)[2] on Page 3, Paragraph 2. ``When they enter the environment as part of jet fuel they may behave the same way as when they are released alone.'' That being the case, one is compelled to at least review some of those complications associated with those chemicals and their metabolites.

review

In the formulation of this review, I've adhered to scientific discipline, balanced with objectivity. That mosaic, if you will, began to focus on a perspective that was more widespread than I had anticipated regarding occupation, exposure and illness. This all crescendoed while doing a literature search that directed this author to a paper which Lesley Rushton[11] had written and made reference to ``a proportional mortality study of all deaths over a 10-year period in New Hampshire found high proportional mortality ratios (PMR's) for service station workers for leukemia, suicide, emphysema and mental conditions.''

Once again this odyssey has been punctuated with an intriguing citation. This was of great interest only because I had to travel to Britain by paper to learn what had transpired in my own back yard. The excitement was soon tempered by the sheer dynamics of the report! Eugene Schwartz[10], M.D. MPH states in the report, ``Further the finding of an excess proportion of deaths from suicide in both groups is consistent with the known neurotoxic potential of solvent exposure. Acute exposure to solvents may produce transient and reversible central nervous system symptoms including headache, dizziness, and incoordination. At higher concentrations convulsions, loss of consciousness, and death may result. Long-term exposure to

solvents can result in memory impairment and behavioral changes, including irritability, depressive symptoms, and emotional stability. Gasoline is a complex mixture of hydrocarbons blended with a combination of additives including antiknock agents, inhibitors, and dyes, of the more than 40 components, most are paraffins, naphthenes, aromatics, and olefins. The benzene content of gasoline is between 1 percent and 3 percent by volume and is higher in unleaded than in leaded fuels (McDermott and Voss, 1979)''. Further on, ``recent data indicate that gasoline vapor may be carcinogenic apart from its benzene component.'' (Note: JP-4 is 50 to 60 percent gasoline).

Individuals subjected to benzene and other compounds should be instructed of the quantitative risk associated with the nature of their exposure in order that appropriate medical protocol may be established for present and future assessment and care. Once those parties are instructed of the dangers of exposure, they can immediately take steps needed to lessen the burden on the already stressed (MFO) mixed functioned oxidases process.

``Benzene is converted to toxic metabolites mostly mixed function oxidases MFO in the liver and bone marrow. MFO-inducing drugs (e.g., phenobarbital, alcohol) and certain chemicals (e.g., chlordane, parathion) may increase the rate at which toxic metabolites of benzene are formed. Theoretically persons with rapid synthesizing marrows, the fetus, infants and children, persons with hemolytic anemia or with agranulocytosis are at increased risk[12]. The Environmental Protection Agency (EPA) classifies benzene as a Group A carcinogen and has estimated that a lifetime exposure to 0.004 PPM benzene in air will result in, at most, 1 additional case of leukemia in 10,000 people exposed. (EPA risk estimates assume there is no threshold for benzene's carcinogenic effects.)''

An interesting characteristic of petroleum hydrocarbons, (in relationship to the MFO process) is a seemingly kindling effect to addiction. Yasuhiro Takeuchi[13] writes, ``Lasarew (1929) reported that the narcotic effect of petroleum hydrocarbons became stronger as the number of carbon atoms became larger, and that aromatic hydrocarbons had stronger narcotic effects than paraffins.''

Harrington[14] says, ``The well-recognized acute narcotic effect of organic solvents has recently led various researchers to suggest that a chronic neuroasthenic syndrome can follow repeated low doses. Some workers, mainly in Scandinavia, postulated that organic psychoses can ensue from such exposure.'' (Axelson et al, 1980).

To expand on these two points of view, its clear a demonstration would be needed to indicate tissue reaction. That evidence was articulated by J.M. de Gandarias.[15] ``A dense accumulation of enkephalin immunoreactive fibers was seen in the basal portion of the lateral septal nucleus and the densest accumulation of enkephalin-containing processes was observed in the globus pallidus, ansa lenticularis and amygdaloid complex, forming a continuous field extending over these areas. This enkephalinergic distribution is coincident with previous reports (Akil et al, 1984; Zamir et al, 1985). (Continuing further) ``The limbic systems is usually affected by organic solvents exposure and it has been demonstrated that aromatic hydrocarbons can cause behavioral changes in mood and even (addiction). This is the case for the largely studied ``glue sniffers'' (Schikler et al, 1982; Lazar et al, 1983).

The hypothesis I bring forth now is, could benzene be the underlying catalyst that stimulates addiction on most levels, drug and alcohol, and if so an uncorrected condition would create a cycle

difficult to break. Could elevated ambient air levels of benzene be a new facet of concern, ever stressing the MFO process in relationship to addiction?

reference: benzene, toluene, hexane, xylene and lead

I have (emphasis, real concern) with past exposure to JP-4 and those particular chemicals incorporated into the formula only because of existing documentation and possible public health consequences.

Example: Benzene: and Breast Tumor Tissue

Gregory G. Oakley[16] writes , ``In addition, studies have demonstrated the copper-dependent oxidation of chemically similar structures, e.g., hydroquinone and 3-hydroxyestradiol, metabolites of benzene and 17B-Estradiol, respectively, to reactive intermediates that induce oxidative DNA damage (19, 20). This pattern of genotoxicity is similar to that reported in the DNA of human breast tumor tissue 21).''

It would seem the point of concern here could be either primary (occupational) or secondary exposure expressed as ambient air concentrations from automobiles, trucks, buses, trains, and domestic exposure, for example, gasoline powered lawn or recreational equipment, combined with alcohol or another substance that would place extra burden on the MFO process.

N-Hexane, Xylene and Toluene and Occupational Exposure

Katsuyuki Murata1[17] examines workers exposed to n-hexane, xylene and toluene and writes, ``The C-CV rsa reflects the activity in the parasympathetic nervous system (Pagani et al, 1986, Hayano et al, 1990a, 1991, Ewing, 1992). Organic solvents, therefore, may affect the CV rr through depression of parasympathetic activity.''

olfactory and causation

At this juncture it would be appropriate to explore a (reactive route) of toxic exposure, the olfactory pathway and its implication on health. Robert Ader[18] states, ``Even before sympathetic innervation of lymphoid tissues was recognized, it was known that lesions of the brain, especially the hypothalamus and limbic systems, had immunological consequences''[18], (further on), ``Medical or posterior hypothalamic lesions are associated with reduced numbers T and B cells and enhanced allograft rejection.''

Claudia Miller[19], M.D., M.S. has presented these thoughts, ``The olfactory nerves provide the most direct link between the outside chemical environment and the brain. There is no blood-brain barrier where these nerves enter the brain as there is for other portions of the brain. The olfactory nerves communicate directly with the limbic portion of the brain, the so-called ``primitive smell brain.'' This brain area is essential for laying down new memories (hippocampus) and regulates mood (amygdala). In addition, it supplies much of the input to the hypothalamus, which in turn regulates autonomic nervous system and endocrine function. Temperature regulation, smooth muscle tone and appetitive behaviors are influenced by hypothalamic output. For many chemically sensitive patients and Gulf Veterans, mood and memory difficulties are their most disabling symptoms. The possibility exists that such symptoms could be triggered by extraordinarily low level chemical exposures and that sensitivity could spread to chemically unrelated substances as a consequence of limbic sensitization or partial kindling.''

examples of associated toxic exposure

As the profile[2] previously indicated, handlers and persons living in proximity of operational activity are of concern; page 3 addresses those chemical elements and their behavior. ``We have some information on several chemicals found in jet fuel (for example,

benzene, toluene, hexane, xylene and lead). We know more about what happens to them when they enter the environment as individual chemicals. When they enter the environment as part of jet fuel, they may behave the same way as when they are released alone.''

These chemicals, being heavier than air, are capable of having an intrusive effect on workers or populations via ambient inhalation. Remembering Knox[9], ``Effective ranges are extended as far as 5KM from the sources. This suggested a hazard related to large scale uses of fossil fuels, especially petroleum, operating through leakage or evaporation or combustion, perhaps all three.'' James W. Tetrud, M.D.[20] narrates a case study of an individual and petroleum ingestion. He states, ``There is little doubt that the relatively small quantity of ingested petroleum waste caused this individual's Parkinsonism. The temporal relationship between ingestion of the substance and subsequent emergence of parkinsonism is clear-cut.'' (Further on), ``In another report, Pezzoli et all described a case of Parkinsonism in a leather worker chronically exposed to n-hexane.'' Pezzoli's[21] report states, ``Since n-hexane is the substance to which the patient had been mostly exposed, a possible toxic action of this volatile hydrocarbon, alone or associated with the other glue compounds and capable of inducing signs of Parkinsonism has to be considered.''

conclusion

There seems to be sufficient documentation that suggest petroleum produces causation, however that's little solace to anyone at risk and develops symptoms.

Without doubt the many sequels following petroleum exposure can have an exhausting effect on both patient, (family), and physician, due to the many symptoms and changing protocols. A team strategy with expanded expertise would benefit not only the patient directly, but also reassure family members that appropriate clinical direction had been taken.

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Statement of Maureen Silverman, Tenant of Independence Plaza, Co-Founder of The WTC Environmental Coalition, Member of WTC Spot Light on The Poor, and Co-Chair of the Outreach and Education Committee of New York City Coalition to End Lead Poisoning

My name is Maureen Silverman and I am a tenant of Independence Plaza and Co-Founder of The WTC Environmental Coalition and Co-Chair of the Outreach and Education Committee of New York City Coalition to End Lead Poisoning. I will first begin by conveying the environmental problems at Independence Plaza. Independence Plaza is a Mitchell Lama development located five blocks from the WTC which has over 1,300 apartments with approximately 4,000-5,000 tenants. We are one of the few racially and economically diverse complexes in Lower Manhattan. During the week of September 11th, one of the three buildings in our complex was evacuated for two weeks. Many tenants in the other buildings voluntarily evacuated because of the danger we were faced with. I live on Harrison Street, which is down the street from the barge WTC clean-up operation at Pier 25. Since September 11th, my neighbors in all three of our buildings have been kept up all night by the thunderous noise of the barge and have been subjected to the environmental contaminants released from it. From our windows we can view the dust and debris released from the site and still witness inconsistent watering down and covering of the debris. Numerous tenants

have developed chronic respiratory problems, nose bleeds, sore throats and skin rashes. The recurring noise from the barge has exacerbated the trauma many tenants experienced from the WTC attack. Although the Commissioner of DEP claimed at the Clinton hearing on February 11th that DEP ensured that all indoor buildings were tested and thoroughly cleaned before people moved back, my landlord did not test and clean 310 Greenwich Street before the evacuated tenants returned. Our landlord only did random testing for asbestos in our complex over 2 months after September 11th. They used a non-aggressive testing method, which industrial hygienists informed us is not effective. There has not been testing for any contaminants other than asbestos, in our entire 3 building complex, despite the host of toxins released from the WTC and our close proximity to the barge. The ducts in our complex have also not been tested. Although many of our terraces have been permeated with dust from the WTC, the landlord claims he has is not responsible to clean or test these areas. The roof tops are still covered with debris and have not been cleaned.

Many tenants report that outside dust continuously enters and covers their apartments and they are afraid of the contaminants they are being exposed to. Maintenance staff are not consistently vacuuming with HEPA vacuum cleaners and have not been trained in safe cleaning methods in the aftermath of September 11th. Our landlord informed us that they applied to FEMA for assistance with further testing and cleaning, but were denied because the EPA told them the air is safe.

I was appalled by DEP Commissioner Miele's contention at the Clinton hearing about the great job DEP has done in ensuring that all indoor spaces were tested and cleaned to the utmost safety in the aftermath of September 11th. A few days after The Clinton hearing I took him up on his recommendation to call the DEP Help line if testing and cleaning has not been done. When I called the help line I was told that they only address water and sewer problems. I subsequently reported this to the Commissioner's office and was referred to the Bureau of Environmental Compliance. After being referred to several different people at this office, I was told someone would call back and take the complaint. All of these people said they were not sure what DEP would inspect for or test for etc. After I asked for and reached a supervisor and told him I was in touch with the Commissioner's Office and attended the Clinton hearing, he told me DEP would send an inspector to my apartment the next day. He said they generally only inspect and test for asbestos. However, he said in light of the circumstances, they would start by inspecting and testing for asbestos and may be able to test for other contaminants later on. He also said they would inspect and test the inside of my apartment, my terrace and the roof. When the inspector came to my apartment, he said he knew I was the one who called the Commissioner's Office and was at the Clinton hearing. He quickly looked around the apartment and terrace and told me DEP is not responsible for anything inside of apartments and the only thing he would do is tell the landlord to clean the terrace. He also said they did not address roof tops. Since last Saturday, my terrace has not been cleaned and no one from DEP called about the situation. I subsequently called a supervisor at the DEP Bureau of Compliance to report the inept response from the inspector and was told someone would get back to me. As of today, no one from DEP has called back. It was obvious that DEP quickly sent someone to my apartment to appease me because of the political circumstances, and did nothing to protect my home. Unfortunately, many tenants of Independence Plaza have moved out in the last 5 months because of the environmental hazards we are facing

and the total neglect of government agencies to hear our concerns or protect us. IPN Tenants Association and individual tenants have written numerous letters and have called government agencies about the unsafe and noisy barge operation to no avail.

The tenants association invited FEMA, DOH, DEP, DEC, the CDC to our complex to hear tenants concerns and answer questions. These agencies promised to address our concerns several months ago and have yet to do so. We were told several months ago that the city would start using low sulfur fuels and truck retrofits to trap diesel emissions by February 1 and this has not happened. We have been promised that the city would ensure that the barge is operated safety and noise would be reduced. This has yet to transpire.

At the end of September, I co-founded the WTC Emergency Environmental Group (now the WTC Environmental Coalition) with a couple of neighbors from Independence Plaza and another neighbor from Warren Street. We were very concerned, confused and frightened. The EPA was telling us the air was safe, although we were feeling sick and articles by independent scientists reported that there were dangerously elevated levels of a variety of toxins in the air which the EPA was not divulging to the public. No one was taking responsibility for indoor testing and clean up and we heard many reports of the unsafe conditions for workers. Unfortunately these circumstances have changed little since the end of September when we first started to meet.

To my knowledge, we were the first group of activists who began to organize to address the WTC environmental concerns down town. Our coalition now consists of residents, workers and school parents. We organized the first public forum regarding WTC environmental concerns and held a rally and press conference at City Hall in December. We have written letters to government officials and testified at public hearings and press conferences regarding the lack of community participation and communication regarding environmental safety issues facing residents, workers and school parents. We have complained about the fragmented, uncoordinated and neglectful manner in which government agencies have dealt with the catastrophic and unprecedented environmental dangers we are facing. However, we have been ignored at all levels of government and by all governmental agencies. We defined 11 immediate needs in after math of September 11th and also developed a longer list of demands.

The 11 immediate needs are:

(1) Implement a centralized coordination of the cleanup effort that is responsive to community needs and includes public participation. The cleanup must address all affected communities, including the immediate surrounding areas and those in contiguous areas. Affected communities must include Tribeca, South Street Sea Port, Battery Park City, The Financial District, China Town, The Lower East Side, Hudson Square, Soho, Greenwich Village, and the East Village. The Federal definition of the disaster must be expanded to include these areas.

(2) Move the barge on Pier 25 away from schools and residences. All other barge and truck clean-up operations must be located away from schools and residences.

(3) Establish strict guidelines and protocol for the entire testing and clean-up operation including affected areas beyond Ground Zero. Protocol should include proper measures to be taken by schools and other institutions in the area with regard to air filtration and operations of HVAC systems.

(4) Control and contain debris to prevent dispersal in trucking and barge operations and minimize diesel emissions and noise.

(5) HEPA vacuum and wet clean streets, side walks, roof tops and parks to continuously assure dust suppression.

(6) Provide safe working conditions and enforcement of safety and environmental laws for Ground Zero workers and other area workers.

(7) Assess and test for environmental contaminants in indoor and outdoor spaces.

(8) Share public and private sampling data, including health data, in a timely and complete manner.

(9) Notify workers, residents and schools prior to potentially hazardous work operations such as removal of the freon tanks and major demolitions.

(10) Engage in public health educational outreach to all area workers, residents and students.

(11) Create a health registry of individuals whose health has been impacted by WTC exposures, including medical surveillance of high risk populations.

despite our vigorous organizing efforts, these needs have still not been met

Most recently, our group wrote letters in January asking for meetings with Mayor Bloomberg and Governor Pataki. The Mayor's Office never called us about our request for a meeting and has ignored our phone calls to his office asking for a meeting. Governor Pataki's Office called a couple of weeks ago telling me they would like to arrange a meeting with our coalition and the Commissioner of State DEC and the Director, State of DOH in March in Albany.

When I told the Governor's Office that we could not go to Albany since we are working people and we think the nature and magnitude of this catastrophe warrants a meeting in New York City by the State, their office told me, the next time they could arrange a meeting in New York City would be in April. After calling back several times and asking for a meeting at an earlier date, the Governor's Office arranged the meeting for March 22 in New York City. However, the Governor himself does not feel he needs to be at the meeting since the State DEC and DOH are in charge of addressing these issues for his office. Considering the urgent and unprecedented environmental health problems we are experiencing down town, I find the late date for the meeting and the disinterest on the part of the Governor reprehensible.

As a long-term activist with New York City Coalition to End Lead Poisoning, I have been concerned about lead hazards in the aftermath of September 11th. Unfortunately, Dr. Evelyn Mauss, a leading expert on lead poisoning who I have worked with for the past 10 years could not be here since she is out of the country. I asked Dr. Mauss, an expert on lead poisoning and Senior Research Consultant to the Natural Resource Defense Council, to analyze the lead hazards, testing and provide some recommendations. Since the October, Dr. Mauss has reported that she was concerned with some very high lead spikes in the air and in the schools that exceeded the lead safety levels. Moreover, she repeatedly reported at public hearings, press conferences and meetings that EPA testing for lead has been grossly inadequate. She has recommend that the EPA conduct more comprehensive and adequate testing and clean up in air dust and soil and in all post-1970 buildings to reflect the impact of the WTC attack. She also recommended that lead testing and clean up be done in all parks in areas immediately near Ground Zero and in peripheral area in Lower East Side, China Town Greenwich Village Etc. Another recommendation she made was for The Department of Health to test and screen children for lead in down town. The WTC Environmental Coalition has supported these recommendations.

Governmental agencies have refused to implement these recommendations.

Dr. Mauss has testified about the potential lead hazards from numerous sources after September 11th. The World Trade Center was built before lead paint was banned for commercial purposes in 1978 and a decade and a half before lead paint was banned in plumbing. Computers contain four pounds of lead and the steel beams of the World Trade Center also contained lead. Many of the surrounding buildings that were damaged by the WTC attack were also constructed after lead paint was banned. The recent findings of lead paint in the elementary schools and Stuyvesant High School which are all near the barge at Pier 25, create serious concerns for parents, students as well as residents living near the barge. If lead hazards have been found in the schools a couple of blocks from Independence Plaza and near several other apartment complexes, including River Terrace, there is a significant risk that our apartments contain lead hazards. However, no Government Agency has provided indoor testing of our apartments for lead or a host of other contaminants. I am appalled at this indifference on the part of our government considering lead causes irreversible brain damage, kidney problems, speech and hearing impairments, and a many other developmental delays and health problems in children. In adults, lead causes osteoporosis and mental confusion. Children are most at risk for lead poisoning. However, adult workers, residents and others are also at risk of lead poisoning and the consequential health affects.

We urge the Senate to mandate thorough and safe testing and clean up of all of Lower Manhattan expeditiously. We ask him to help us meet all of our 11 immediate needs, including moving of the barge immediately. We have waited long enough and can no longer compromise the health and safety of the residents, workers, and school children in Lower Manhattan.

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Environmental Demands of The WTC Environmental Coalition

The WTC Environmental Coalition is comprised of downtown residents, workers, school parents and and supporting activist organizations who are concerned about the environmental impact of the World Trade Center disaster. We demand the following from government agencies:

immediate site safety at ground zero

Public input on site management and with the help of that input, require improvements in site management at Ground Zero to reduce pollution associated with the site and recovery and removal efforts. These improvements should include safe clean-up methods for debris removal from the WTC site. A primary concern is clean up at Pier 25. We demand that the barge and truck clean up operation be moved to an area that is less populated by residents and where there are not schools. We also demand safe, adequate and consistent covering and watering down of the debris. Diesel trucks and equipment must be replaced with cleaner fuels such as oxi, bio or low sulfur diesel. The City Anti-Idling Law must be enforced. Truck retrofits such as catalytic converters must be used to trap diesel emissions. Noise must be reduced to avoid disturbances to residents from the clean-up operation.

Implementation of OSHA work safety standards.

An on site industrial hygienist for all workers in WTC clean up with authority to implement precautionary health measures.

public health and safety outdoor air

Ongoing disclosure of updated and accurate test results of all contaminants to residents, workers, Parent Teacher Associations and other public members. EPA, DEC, DEP and DOH must ensure that the public

has access to all outdoor test results, methods of testing and safety standards for each contaminant.

Massive, consistent and ongoing clean up of streets, roof tops, awnings and other outdoor areas with Hepa vacuums and subsequent watering down of these areas.

Government agencies should invite public comment on the air monitoring program. They should then develop a revised air testing program based on public comment.

Government agencies should regularly report outdoor test results to the public through TV and radio announcements, literature distributions, facts sheets etc. in various languages, especially Spanish and Chinese.

Risk Communications to the public should be done by an Environmental Health Advisory Committee comprised of environmental health doctors, environmental advocacy groups, community members and representatives of the Department of Health.

Preventive and Precautionary Health Measures Must be Implemented--Government agencies must make specific recommendations to the public regularly regarding ways to reduce their exposure to outdoor air emissions thorough public service announcements, facts sheets in multiple languages and ongoing community meetings. Specific education geared to vulnerable groups such as children the elderly, those with pre-existing respiratory, heart problems, compromised, immune systems, etc.

Consistent and ongoing testing and professional cleaning of all parks, playgrounds and community gardens in core and periphery areas for lead, asbestos and all other contaminants. These include outdoor areas in Tribeca, The Financial District, The Sea Port, South Bridge, China Town, The Lower East Side, Greenwich Village and parts of Brooklyn effected by the disaster.

Since lead levels have exceeded safety standards for ambient air, there must be massive and ongoing testing for lead in air, dust and soil. Independent scientists have reported that tests have shown lead to be in the highest concentration of all heavy metals in air dust samples surrounding the WTC site.

public health and safety indoor air

Implementation of a well coordinated and comprehensive hazard assessment for a variety of contaminants of all downtown buildings, including residential buildings, offices and schools by a team of industrial hygienists (i.e. Asbestos, lead, silica, fiberglass, PCB's, Dioxin, etc.). Government must ensure professional clean up and abatement by certified and trained workers when tests show levels of toxins above safety standards.

Indoor testing of lead should be done in buildings constructed after 1970, when the prohibition of indoor lead paint was enforced in order to reflect the impact of the WTC disaster.

Clean up must include thorough and professional clean up of all ventilation systems, air ducts, air conditioning systems and heating systems, along with clean up of general areas.

Post clearance testing by independent parties must be implemented.

All indoor test results and post clearances must be provided to the public.

Preventive Public Health Advice must be provided to all residents, workers and school parents regarding indoor hazards. (Through public service announcements, fact sheets, community meetings, etc. in multiple languages).

immediate assistance to affected groups

Public education regarding health symptoms requiring medical intervention and referrals to appropriate health professionals for early detection and treatment.

Better coordination and consistency of information to the public about assistance available from the Red Cross, FEMA and other agencies for air purifiers, HEPA vacuums, relocation money, professional clean up etc. To assist in these efforts, funding and support for creation of community based advocacy groups to help people apply for funds and services and navigate the bureaucracies. These services must be provided in multiple languages.

Up-front funding for home interventions such as air purifiers, HEPA vacuums, etc.

environmental oversight and planning

Environmental concerns must be treated as part of the WTC disaster, instead of an extraneous aspect of it.

Community participation in environmental decisions must take place. We recommend regular bi-monthly meetings between government agencies and the public where public input is part of plans taking place.

A Dedicated disaster fund specifically earmarked to address WTC environmental concerns.

Implementation of new testing and safety standards for indoor and outdoor air that accurately reflect The WTC situation. This should include development of methods to test the synergistic effect of all the contaminants.

An Independent Scientific Advisory Board to represent the public in review and approval of all research on environmental issues. Communities should be collaborators in the research and the public should get results promptly along with recommendations to improve hazardous conditions etc.

An independent Ombudsmen representative of the public must be established with assistance of the Scientific Advisory Board to oversee research and clean-up efforts.

Establishment of a central registry to monitor health problems related the WTC.

Vigilant and ongoing testing and monitoring of children's lead levels in areas near the WTC. This should include reporting of children's lead levels to the Department of Health and to parents.

Implementation of environmental justice principles, including funding and support for low-income communities of color affected by the WTC disaster, including China Town, The Lower East Side and parts of Brooklyn.

Funding for a Grass Roots Community Group to address environmental concerns from a bottom up community-based planning perspective.

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Statement of Jenna Orkin, Brooklyn, NY

Senators Clinton and Lieberman, I am a co-founder of the World Trade Center Coalition for Clean Air, an organization of parents and residents of Lower Manhattan. I am also a parent at Stuyvesant High School. Stuyvesant High School is in a unique position. Not only do we have the World Trade Center site to the south. We also have the World Trade Center site to the north. All the debris is brought to Stuyvesant's north doorstep where it is dumped onto the barge before making its way to its final resting place in Staten Island. The barge operation blocks our most important exit for evacuation. In the event

of another disaster downtown our school will not be able to go north, away from the disaster but will have to go south, toward it. However, this is the least of our problems. The barge operation also involves diesel cranes and trucks going full throttle day and night. Diesel contains forty toxic air contaminants (American Lung Association of Pennsylvania) from acetaldehyde to xylene isomers. These include lead, cadmium, mercury, benzene and dioxins. It also contains sixteen carcinogens. The EPA says diesel is ``highly likely'' to be carcinogenic. (Http://www.epa.gov/ncea/diesel.htm). Because of the diesel and the debris, Stuyvesant has had readings of PM2.5 that have been many times higher than the readings at Ground Zero. PM2.5 is particulate matter that is small enough to penetrate deep into the lungs and alveoli. Unlike PM10, it doesn't come out again. Being so small, it also has a relatively large surface area to volume ratio so that other noxious chemicals attach to it. Lead levels have been 15 times higher than regulation limits in the cafeteria, where the lead could be eaten. Asbestos has also been high. A recent article by Andrew Schneider in the St. Louis Post Disptach says that asbestos may, in fact, be nine times higher than current instruments would indicate. Cancer rates from the asbestos alone may be 1 person in 10. Other chemicals such as isocyanate, are not routinely tested for. But on the few occasions they were tested for, they were found to be high.

The synergistic effect of all these chemicals, as you will read in Marjorie Clarke's testimony, is explosive. For instance, if you're an asbestos worker and a smoker, it's not 2 or 3 times as bad as being one or the other; it's 80 or 90 times as bad.

How is Stuyvesant protected against this onslaught of toxins? To date, hepa filters have not been installed and the ducts have not been cleaned according to protocol. The mouths of the ducts were cleaned, air was blown through forcefully, then tested and found to be satisfactory. But the company that did the testing, ATC, is the company that told us asbestos levels were satisfactory on a day when the EPA or the Parent Association's company, Howard Bader, (accounts differ) made a special call to the Parents' Association to say asbestos was well above regulation limits. The air at Stuyvesant is so bad that recently the Principal decided to let students go out for lunch on the theory it didn't make that much difference where they went.

Students, like the residents in the neighboring buildings, have contracted chemical bronchitis and new-onset asthma, conditions which could last their entire lives. When we have complained to the Chancellor's office, their response has usually been some version of, ``So take your child to the doctor,'' and, ``You're welcome to transfer him to his zoned school.''

In the immediate aftermath of September 11th the city's attitude was, ``This is an emergency; everyone has to roll up his/her sleeves.'' But after the abandonment of any hope of rescue, what kind of emergency is this, exactly? A real estate emergency? An economic emergency? Whatever it is, it is creating far more emergencies down the line with the reckless manner in which it's being conducted. The burden of this clean up is falling largely on the shoulders of the young. When Giuliani and other officials spoke of making sacrifices, what this has come down to in the case of our children is decades off their lives. Under the guise of heroics, the city has been engaged in chemical warfare against its own children. This is murder. The fact that we don't know who will die, precisely, or when, makes it no less criminal. Many will die. As always, the excuse will be the times we were living

in. Morals are mores, goes the argument, ethics are in the ether. In fact, morals and ethics have standards that stand outside what everyone else is doing. This ``emergency'' clean up is not an emergency. It is immoral, unethical and a crime against humanity.

We urgently request the immediate installation of hepa filters. We also request that drastic action be taken with respect to the barge. If there is any space anywhere else, for instance at Pier A, move the barge away from Stuyvesant. If not, contain the debris so dust clouds don't fly when it's dumped onto the barge. Retrofit the trucks to catch particulates. Please take care of our children.

[GRAPHICS NOT AVAILABLE IN TIFF FORMAT]

Community Board No. 1,
New York, NY, February 1, 2002.

Mr. Tom Ridge, Director,
Office of Homeland Security,
The White House,
Washington, DC.

Dear Mr. Ridge: At our January 15 monthly meeting Community Board No. 1 adopted the attached resolution offering our recommendations for improving homeland security here in Lower Manhattan. Our Community Board is empowered by the city of NY to represent the interests of the residents and workers of this area which includes the site of the former World Trade Center. Regrettably, our districts has twice been targeted by terrorists (1993, 2001) and with such landmarks as the NY Stock Exchange and the Statue of Liberty here, we will continue to be a potential target. We urge you to consider these four recommendations as you put together our Nation's homeland security plan:

(1) A No Fly Zone for any aviation be established in and around Lower Manhattan

(2) Sophisticated, state-of-the-art monitoring devices be installed in the district which would indicate the presence of biological, chemical and nuclear agents.

(3) Any trials of suspected terrorists should not be conducted in our highly populated district nor should suspected terrorists be imprisoned in Lower Manhattan.

(4) The Office of Homeland Security should appoint a liaison to interact between their office, Community Board No. 1, and other local government offices.

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Community Board No. 1 Manhattan
Resolution
February 19, 2002
Committee of Origin: Executive

Committee Vote: 12 IN FAVOR, 0 OPPOSED, 0 ABSTAINED, 0 RECUSED
Board Vote: IN FAVOR, OPPOSED, ABSTAINED, RECUSED

Re: Senate WTC Air Quality Oversight Hearing Requests

WHEREAS, Senator Hillary Rodham Clinton (NY) is conducting

oversight hearings concerning the air quality and health effects at Ground Zero and Lower Manhattan due to the WTC attacks, and

WHEREAS, Since the September 11th attacks on WTC and the subsequent collapse of the towers and surrounding buildings, the quality of the air has been of great concern and confusion to lower Manhattan residents and workers due to conflicting reports. Independent and other government agencies test results seem to contradict the Environmental Protection Agency and other official government bodies despite official assurances that the air is ``safe'', and

WHEREAS, With the fires burning different types of materials inside the WTC, there was significant exposures from both airborne outdoor and indoor dust, smoke, particulate matter, gases, individual toxins and combination of toxins interacting with each other (aka: synergistic effect). As a result residents and workers downtown have been experiencing varied health problems, and

WHEREAS, Some of these symptoms include skin rash, eye, nose, and throat irritation, nausea, headaches, asthma, chronic bronchitis, severe coughing (aka WTC cough), and upper respiratory reactive airway disease, and

WHEREAS, All of the above exposures have short-term and long-term health risks depending on what was inhaled, how much of it, in what combination, and for how long, and

WHEREAS, The EPA test results showed the levels for individual contaminate without taking into account how they interact like a toxic soup in an increasingly exponential way, and

WHEREAS, There was also significant distributions of dust on top of roofs, water towers, and sucked into air conditioning units and building ventilation systems: Now therefore, be it

resolved that:

CB No. 1 strongly urges that the following recommendations be implemented immediately:

(1) Designate a lead agency to handle environmental issues affected by the WTC disaster.

(2) Enforce existing laws, especially environmental regulations and public health standards and policies.

(3) Create a central medical data base registry to keep track of all exposed people who are having health problems, for tracking of short- and long-term health risks, and to inform people of the medical treatments that are available.

(4) Improve and continue indoor and outdoor air testing, and surface testing using state-of-the-art equipment and up to date methods.

(5) Conduct research to assess the short- and long-term health impact of combinations of dust and gases, the synergistic effects and combinations of toxins, and provide funding for the research.

(6) Establish new air quality standards for individual and synergistic combinations of pollutants.

(7) Develop clean-up and post-clean-up protocols for indoor and outdoor spaces.

(8) Containerize the debris removal operation.

(9) Require stringent mitigation of diesel exhaust pollutants from vehicles, cranes and generators through the use of low-sulfur fuel, particulate traps and other technologies.

(10) Establish an air quality hotline with an appropriate Government Agency or qualified group or organization.

(11) Establish standard operating procedures for future emergency responses.

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Community Board No. 1 Manhattan Resolution
January 15, 2002
Committee of Origin: Executive

Committee Vote: 7 IN FAVOR, 1 OPPOSED, 0 ABSTAINED, 0 RECUSED
Board Vote: 34 IN FAVOR, 5 OPPOSED, 2 ABSTAINED, 0 RECUSED

Re: Home Land Security

WHEREAS, The Federal Government is requesting recommendations to improve homeland security, and

WHEREAS, Lower Manhattan has twice (1993, 2001) been the target of terrorist attacks upon the World Trade Center, and

WHEREAS, Lower Manhattan, as the financial capital of the world and the home to many internationally known or otherwise sensitive buildings and residences and structures, continues to be a potential target for terrorists, now therefore, be it

resolved that:

CB No. 1 recommends that the Federal Office of Home Land Security provide adequate funding to implement the following recommendations to improve security in Lower Manhattan:

(1) A No Fly Zone for any aviation be established in and around Lower Manhattan.

(2) Sophisticated, state-of-the-art monitoring devices be installed in the district which would indicate the presence of biological, chemical and nuclear agents.

(3) Any trials of suspected terrorists should not be conducted in our highly populated district nor should suspected terrorists be imprisoned in Lower Manhattan.

(4) The Office of Home Land Security should appoint a liaison to interact between their office, Community Board No. 1, and other local government offices.

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Statement of Marc J. Ameruso, New York City Council Environmental Committee

My name is Marc Ameruso, I have been a resident of Tribeca for 10 years. A member of Community Board No. 1 for 4 years, and very much involved with community activism in the neighborhood.

Since September 11th I have like many others, have been very concerned with air quality caused by the collapse of the World Trade Center (WTC). Also, since the first week I have been learning as much as possible to educate myself on the subject of air quality.

Four weeks ago, I never heard of furans or chrysotiles, or how harmful they can be to humans. Today I speak to you as an American, a New Yorker, and a Tribeca resident. Not to diminish what people are feeling around the world, the country, or even in the rest of New York.

This area where the WTC stood is my neighborhood, and my HOME.

Please let's not forget that, because even after the attacks, I still find myself having to convince the some powers that be and the people who will be charged with the rebuilding the WTC site, that this is area is a neighborhood with many long time residents who want to stay and continue to raise their children in this wonderful community, that myself and many others have been working so hard to make a better place. We will rebuild and come out of this better than before.

One day the fires will go out, the smoke will clear and that smell will disappear. But right now, the air quality can throw a monkey wrench into all our efforts.

People just want to know what, how to protect themselves and safely clean up. I am not an alarmist, I just want the truth and so do they.

With the resulting distribution of dust and particulate matter blowing around the city, including into Brooklyn, Queen's, Staten Island, and New Jersey as well as, the fires continue to burn who knows what. Under the rubble, spouting out a laundry list of harmful toxins into the air are making residents and rescue workers sick. They visit their doctors, only to be told that their symptoms are psychosomatic.

Please allow me to briefly relay part of my experience to the committee which will bring the air quality issue into perspective.

On September 11th, I was home just waking up, preparing for primary day. Of course, that did not happen. When the towers collapsed I went to the trunk of my car and retrieved my construction gear that I kept there from my old construction job many years ago, then proceeded downtown to see what I could do to help.

By the way, my equipment did not include a respirator.

I stayed at the site for the next 3\1/2\ days helping in anyway I could, from search and rescue to off loading ships to bringing supplies and equipment to various locations.

I slept in Stuyvesant High School for two nights. Everybody down there helped in the same way with no real direction from a supervisor.

pictures\1\

\1\ Retained in the committee's file.

I have a few photos that I would like to share with the committee. (September 11, surgical mask); (September 12, smiling, just got respirator); (September 13, just evacuated from Ground Zero, 1 Liberty imitate collapse).

By the way, there were many other people down there like me, who were for lack of a better term were ``Ground Zero civilian rescue volunteers'' working side by side on top and around the rubble pile with the incredible firefighters, police, and other rescue workers.

So please remember not leave this courageous group of people out of in any future citations or accolades.

I knew there were all types dangers but help was needed and I had not a second thought about it. The 3\1/2\ days I spent at the site I observed very few rescue workers wearing respirator masks, and I did not hear anyone giving instructions to do so.

Although I did see handwritten signs posted around saying, ``Asbestos levels are high, wear your masks.''

Interestingly, members of the military and rescue workers from out of town who had their own respirators almost always keep there mask on while working. The treatment I had at the triage center set up inside Stuyvesant High School included oxygen respiratory treatment twice, eye washes at least nine times, and antibiotic eye drops for a scratched cornea.

I still have a nagging cough as do many other people. I have resigned myself to the fact that I may get sick in 10 or 20 years because of this. But I accept it because helping was the right thing to do.

I relay this part of my experience to you not brag, that is not way I am. I told you my story because going down to help was my choice. The main problem here is that the EPA is not giving the residents of New

York and the rescue workers a choice by telling them the air quality is OK. This is where your committee can help. The correct specific questions need to be asked to the EPA under oath.

The City Council has the power with these oversight hearings, to subpoena the EPA to testify as to the truth. Just don't subpoena the bosses, the administrators, the talking heads. Subpoena the toxicologists and epidemiologist, some of whom I have spoken to one on one. They can't even look me in the eye when they say the air quality is OK. I can see the torment in their faces, they know the truth with air and I feel they wish they could tell us. Get them down here to testify.

Your committee must ask very specific questions or they will double talk and bog you down with scientific and technical banter and all the while never answering the question.

There are people here that can show the committee exactly how to frame these questions today and for the followup hearing next week. The EPA has been very selective with the information they have been releasing to public and on there website.

Picking and choosing what you want someone to see is the same thing as lying in my book. There is proof of this in the EPA's own air quality test results and reports and confirmed by other independent testing. One independent test that I obtained at a location on Rector Place had a test result of 4.3 percent for Asbestos on an area described in the report as, ``Roof/Play area''. We now know that OSHA uses a 1 percent level for Asbestos as a safe standard.

Let's now talk about the EPA test results. It is my understanding that the EPA air quality reports were only able to be obtained through a freedom of information request by the New York Environmental Law & Justice Project.

That first week or so after the attacks, I thought I was the only person who believed that we were not getting the whole truth from that EPA. I felt like I was in a bad ``B'' movie claiming that a meteor is going to hit the earth and I was the only one hit.

Also as of today a Freedom of information request sent to NYC Department of Health for their test results and air quality reports as not been honored. Please ask them why there are holding back? So the questions remains. What is in the air that is making people sick? Each time some rubble is removed, oxygen gets down under there and fuels the fires burning the countless type of materials that were in the WTC. Is the EPA using adequate equipment?

At a recent air quality forum, a scientist said that there are chemicals known as super tiny particles. The current EPA equipment can not detect these tiny particles. So how do they know it is safe?

Furthermore, the broad spectrum testing the EPA is conducting does not take one important factor into account. Just because a particular test result does not reach or go over some threshold set by the EPA or OSAH, does not mean these particles can't make people sick. In other words, just because some reading does not make it up to some number that they have in a book doesn't mean people can't still can get sick. These ``low levels'' are making people sick and that is exactly what is happening.

I am going to briefly read to you some of the EPA's own test results and air quality reports that was obtained through the Freedom of Information Request I told you about earlier. There will be more specific and detailed information from other people who have testified or who will be testify.

September 20, 97 samples taken, 26 could not be analyzed because

the filters became clogged.

October 14, Dioxin, 10 samples were collected on October 2 and analyzed for dioxin/furans. Four of the samples showed results above the guideline level at which EPA would take some type of action to reduce people's exposure.

September 22, Internal Use, 13 new asbestos samples analyzed from the 13 (two new) fixed air monitors in Lower Manhattan. Five of the thirteen had levels above the EPA school standard.

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This is just a small sample of what I read in the EPA's own reports. There is enough in there to question what is really going on with the air. We should be jumping up and down for the truth! I do not buy the EPA party line that breathing the bad air is OK short term. It has been 6 weeks with no end in site. It was smelling on the way to City Hall. If it makes you sick something is wrong. Lets be honest; is the real estate values of downtown and the stock exchanges worth people lives. Downtown Manhattan is not going anywhere.

Thank you. I will happy to take any questions.

Statement of Marc J. Ameruso, New York State Assembly Committee on Environmental Conservation, Health, and Labor

My name is Marc Ameruso, I have been a resident of Tribeca for 10 years. A member of Community Board No. 1 for 4 years, and very much involved with community activism in my neighborhood.

Today I speak to you as an American, a New Yorker, and a Tribeca resident. Since September 11th, I have like many others, have been very concerned with air quality caused by the collapse of the World Trade Center (WTC) because of the continuing cloud of gases and dust that spew from under the rubble for the last 2\1/2\ months. Also, since the first week I have been learning as much as possible to educate myself on the subject of air quality. I have lost count on how many forums and town hall meetings I have attended, including two City Council Environmental Oversight hearings. I would like to commend Stanley Michaels for having those hearings and also thank Speaker Silver and the rest of the committee for having these oversight hearings today.

I would like to submit part of the transcript from the City Council November 8 hearing for your records. I have highlighted much of the relevant testimony. Six weeks ago, I never heard of furans, chrysotiles, or the term synergistic effects also know as ``toxic soup'' and how harmful they can be to humans.

I always hear the same party line statement from the EPA and others at these hearings and forums. The air is ``safe'' and there are ``no long-term health effects'', which is always qualified with [according to current studies or to best of our knowledge]. This is a cover-your-ass statement for 10, 15, 20 years down the road. The statement also gives the impression that the air is safe and is misleading to the public at large. There are too many unknowns on the effects of this amount of combination of gases. In the limited amount of research, it has been shown that combinations just doesn't double your health risk but can increase it exponentially. They should just say definitely that they do not know what the long-term and short-term risks are and then we can take it from there.

I want to say the following because I think it is important not to diminish what people are feeling around the world, the country, or even in the rest of New York. This area where the WTC stood is my neighborhood, and my HOME. Please let's not forget that, because even after the attacks, I still find myself having to convince the some of the air quality powers that be and the people who will be charged with the rebuilding the WTC site, that this area is a neighborhood with many long-time residents who want to stay and continue to raise their children in this wonderful community, that myself and many others have been working so hard to make a better place. We will rebuild and come out of this better than before.

One day the fires will go out, the smoke will clear and that smell will disappear. But right now, the air quality can throw a monkey wrench into all our efforts. People just want to know what, how to protect themselves, what type of treatment they can receive if they are sick, and how to safely clean up their buildings and apartments? Not to be told when they visit their doctors, that their symptoms are psychosomatic. Please, enough of that already. I am not an alarmist, I just want the truth and so do they.

With the resulting distribution of dust and particulate matter blowing around the city including into Brooklyn, Queen's, Staten Island, and New Jersey, as well as the fires that continue to burn, the numerous amount of materials under the rubble spouting out a laundry list of harmful toxins into the air that are making rescue workers sick as well as residents and office workers outside of Ground Zero. Children, pregnant women, and the elderly are at the most risk. Mount Sini has been seeing some of these people at there clinic, so something is wrong.

Please allow me to briefly relay part of my experience and observations to the committee which will bring the air quality issue into perspective. On September 11th, I was home just waking up, preparing for primary day. Of course, that did not happen. When the towers collapsed, I went to the trunk of my car and retrieved my construction gear that I kept there from my old construction job of many years ago, then proceeded downtown to see what I could do to help. By the way, my equipment did not include a respirator.

I stayed at the site for the next 3\1/2\ days helping in anyway I could, from search and rescue to off loading ships to bringing supplies and equipment to various locations. I slept in Stuyvesant High School for two nights. Everybody down there helped in the same way with no real direction from a supervisor.

pictures\2\

\2\ Retained in the committee's file.

I have a few photos that I would like to share with the committee. (September 11th, (surgical mask); September 9-12, (smiling, just got respirator); September 9-13, (just evacuated from Ground Zero, 1 Liberty, imitate collapse).

If you look closely at the picture you can see in the background that the other rescue workers around me do not have the proper protective equipment. By the way there were many other people down there like me, who were for lack of a better term were ``Ground Zero civilian rescue volunteers'' working side by side on top and around the rubble pile with the incredible firefighters, police, and other rescue workers.

So please remember not leave this courageous group of people out of

any future citations or accolades and they may also have health problems. How do we track them or everybody else for that matter. I knew there were all types dangers but help was needed and I had not a second thought about it. The 3\1/2\ days I spent at the site, I observed very few rescue workers wearing respirator masks, and I did not hear anyone giving instructions to do so. I did see some handwritten signs posted around saying, ``Asbestos levels are high, wear your masks.''

Interestingly members of the military and rescue workers from out of town who had their own respirators and almost always keep there mask on while working. The treatment I had at the triage center set up inside Stuyvesant High School included oxygen respiratory treatment twice, eye washes at least 9 times, and antibiotic eye drops for a scratched cornea.

I still have a nagging deep chest cough as do many other people I have spoken with who were not rescue workers. I have resigned myself to the fact that I may get sick in 10 or 20 years because of this. But I accept it because helping was the right thing to do. I relay this part of my experience to you not brag, that is not the way I am. I told you my story because going down to help was my choice.

The main problem here is that the EPA is not giving the residents of New York and the rescue workers a choice by telling them the air quality is OK and there will be no long-term health effects. This is where your committee can help. The correct specific questions need to be asked to the EPA under oath. If the Assembly has the power with these oversight hearings, to subpoena the EPA to testify as to the truth. Just don't subpoena the bosses, the administrators, the talking heads. Subpoena the toxicologists and epidemiologist, some of whom I have spoken to one on one off the record. They can't even look me in the eye when they say the air quality is OK. I can see the torment in their faces, they know the truth with air and I feel they wish they could tell us.

Get them down here to testify. Your committee must ask very specific questions or they will double talk and bog you down with scientific and technical banter and all the while never answering the question. There are people here that can show the committee exactly how to frame these questions today and hopefully there will be a followup hearing on this subject. The EPA has been very selective with the information they have been releasing to public and on there website.

Picking and choosing what you want someone to see is the same thing as lying in my book. There is proof of this in the EPA's own air quality test results and reports and confirmed by other independent testing which I am sure you will hear about. One independent test that I obtained at a location on Rector Place had a test result of 4.3 percent for Asbestos on an area described in the report as, ``Roof/Play area''. We now know that OSHA uses a 1-percent level for Asbestos as a safe standard. But I think we need to be very careful about being happy that a certain toxin is below a particular level. What has happened here is unprecedented. Some of the standards that exist today were set many years ago and were not set for the type of exposure that we are experiencing.

They also may have set at a certain level in a negotiation between a chemical company and the Government. Many of the toxicologists and epidemiologist I have spoken with tell me that these standards change often, most of the time to lower threshold. The standards are also subject to debate in the scientific community.

Let's now talk about the EPA test results. It is my understanding

that the EPA air quality reports were only able to be obtained through a freedom of information requests.

Also as of today, a Freedom of Information Request sent to NYC Department of Health for their test results and air quality reports as not been honored. Please ask them why they are holding back? So the questions remains, what is in the air that is making people sick? Each time some rubble is removed, oxygen gets down under there and fuels the fires burning the countless type of materials that were in the WTC. Is the EPA using adequate equipment? At a recent air quality forum, a scientist said that there are chemicals known as super tiny particles. Can the current EPA equipment detect these tiny particles? So how do they know it is safe?

Furthermore, the broad spectrum testing the EPA is conducting does not take one important factor into account. Just because a particular test result does not reach or go over some threshold set by the EPA or OSAH, does not mean it is safe. Also, what about the background levels? It does not mean these particles can't make people sick. Just because some reading does not make it up to some number that the EPA has in a book doesn't mean people can't still can get sick. It is irreverent that individual toxins are at ``low levels'' most of the time when they are making people sick, and that is exactly what is happening.

I am going to briefly read to you some of the EPA's own test results and air quality reports that was obtained through the Freedom of Information Request I told you about earlier. There will be more specific and detailed information from other people who have testified or who will be testifying.

September 20, ``97 samples taken, 26 could not be analyzed because the filters became clogged.''

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This is just a small sample of what I read in the EPA's own reports. There is enough in there to question what is really going on with the air. We should be jumping up and down for the truth! I do not buy the EPA party line that breathing the bad air is OK short term.

It has been 6 weeks with no end in site. When does short term end. What is the short term for Dixon or the short term for PCB's? I was smelling it on the way to this hearing. If it makes you sick something is wrong. To sum up, I think four things need to be done; (1) The City needs funding to coordinate and organize the cleanup, with a Ground Zero air quality czar for lack of a better term. (2) Begin research and study the what happens when so many contaminants and toxins interact with each other in various combination, the synergistic effects. (3) Track people's long- and short-term health effects from the ``toxic soup'' that we have been breathing in since September 11th and have all these people in one data base. I guess we have now become lab rats. (4) Have better protocols for debris removal, at the November 1st City Council hearing, the EPA said there were using some Super Fund Site

protocols but were unwilling to declare the WTC site an overall Super Fund Site.

Why? Like anything else, always consider the source of the information. Who has an agenda? Lets be honest; is the real estate values of downtown and the stock exchanges being open worth people lives. Downtown Manhattan is not going anywhere. Thank you. I will happy to take any questions.

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Niche Analysis, Inc.--Bulk Sample Analysis Report

Sample No.	Type of Material Condition/ Appearance	Sample Location	Asbestos Content and Percent	Non-ACM Content and Percent
1	Dust/Gray	Apt 2J/Living room/ Window wash.	Chrysotile	25 FB, 2 CL
2	Dust/Gray	Apt 2J/Living room/ Trapped on AC filter.	ND	95 FB, 2 CL
3	Dust/Gray	Apt 2J/Bedroom/ Trapped on AC filter.	ND	90 FB, 5 CL,
4	Dust/Gray	Apt 2J/Living room/ Window sills.	Chrysotile	30 FB, 30 CL
5	Dust/Gray	Apt 2J/Debris from exterior window frame.	ND	6 FB,< 1 CL
6	Dust/Gray	Apt 2J/Living room/ Dirt sample from floor.	Chrysotile	45 FB, 10 CL
7	Debris/Gray	Roof/North edge of room.	Trace Chrysotile	45 FB, 10 CL
8	Debris/Gray	Roof/Play area (on end of rubber squares).	Chrysotile	40 FB, 30 CL
9	Dust-Debris/Gray	Roof/South side of roof.	Chrysotile	40 FB, 15 CL
10	Debris/Gray	Roof/Perimeter north side.	Chrysotile	50 FB, 10 CL

11..... Debris/Gray..... Roof/Middle 2.2 Chrysotile.... 40 FB, 15 CL
section.

Note: The balance of each sample is non-fibrous particulates. Please contact us promptly if you have any questions about the results. Analysis was performed by using ``Point Count Technique'' as required and recommended by the New York State Department of Health and USEPA Interim Method for ``Identification of Asbestos in Bulk Samples''. This report must not be used by the client to claim product endorsement by NVLAP or any of the U.S. Government. This report relates only to the items listed. Detection limit is 1 percent for asbestos. NICHE's liability not to exceed the invoice amount. Sample location was provided by the client. Polarized light microscopy is not consistently reliability in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if the material can be considered or treated as non-asbestos-containing. ND=None Detected CL=Cellulose FB=Fiberglass

Statement of Marcy Benstock, Executive Director of Clean Air Campaign Inc.

Clean Air Campaign Inc. is grateful to Subcommittee Chairman Joseph I. Lieberman and Senator Hillary Rodham Clinton for holding a February 11, 2002 hearing on the impacts of the September 11th attack on the World Trade Center on air quality in the area of the WTC, and how to address them. We appreciate the opportunity to submit these comments for the hearing record.

Clean Air Campaign (CAC) worked closely with City and Federal agencies, and organized citizen watchdogs to go door-to-door, to get soot from every polluting building in a 200-block area of Manhattan cleaned up at the source in the 1970's. This effort succeeded in reducing particulate pollution by one third in the target area, CAC also has an office in a commercial office building near the WTC, which was downwind when the towers collapsed. We have been trying for more than 5 months to get the information necessary to get our office and its contents decontaminated the right way.

recommendations

1. Cleanup first.--The Lower Manhattan, Development Corporation, (LMDC) placed a fullpage ad in today's New York Times (February 25, 2002, p. B5) proposing to use a U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant to provide financial assistance and/or incentives to eligible individuals to remain in homes or apartments in Lower Manhattan, or to move into the area. This is premature.

Asbestos and other dangerous contaminants which do not go away on their own should be removed from the air and dust inside all the offices, apartments, schools, stores and buildings in Lower Manhattan which have not yet been effectively decontaminated. This should happen before residents and workers in the Lower Manhattan are given incentives to go back to their homes and offices, or to relocate to an area--Lower Manhattan--which may endanger their health.

2. More than a ``professional'' cleaning should be performed.--Many ``professional'' cleaning companies working in Lower Manhattan are not performing asbestos remediations, and may not have skilled and trained staff qualified and licensed to do the work, or the required certifications. Even certified firms may have outstanding violations. Even top companies known to do good asbestos remediation work have not been informing potential commercial tenants that there is a difference between an asbestos remediation and other kinds of cleaning, or what specific tasks should be included in a cleaning contract for a given office.

A widespread cleaning/decontamination should be performed in as many buildings and offices and apartments in Lower Manhattan as necessary by the U.S. Environmental Protection Agency (EPA), the Agency that cleaned the Senate Hart Office Building. At minimum, the appropriate EPA office should issue the contracts for this widespread clearing and decontamination, in an open, public contracting process which fully complies with all appropriate Federal mandates, Qualified asbestos remediation firms from across the country should be encouraged to submit their qualifications and bids.

3. Truly independent and credible testing of air and dust samples should be performed at appropriate locations throughout Lower Manhattan, under protocols developed and reviewed by the best Certified Industrial Hygienists (CIHs) in the country, the best qualified U.S. Environmental Protection Agency (EPA) staff in Washington, DC and Research Triangle Park, and other qualified professionals.

It is essential that this effort begin again without built-in conflicts of interest. The testing must be performed in the absence of political or financial incentives to do the testing the wrong way, to void certain data, and/or to prevent the data from being reviewed by competent professionals across the country--quickly.

The NY Daily News reported February 22, 2002, that the Lower Manhattan Development Corporation (LMDC) was considering the funding of air quality ``testing and remediation,'' and was considering ``hiring a consultant to `harmonize' standards for indoor air quality.'' LMDC should not be involved in either air testing or remediation in any way.

4. In considering any appropriate role for LMDC, U.S. EPA and Members of the Senate Environment and Public Works Committee and its staff should review the documents through which the LMDC was created, and the New York State laws which govern the powers and mandate of LMDC.

The Lower Manhattan Development Corporation (LMDC, formerly called the Lower Manhattan Redevelopment Corporation) is a wholly-owned subsidiary of the New York State Urban Development Corporation (UDC), doing business as the Empire State Development Corporation (``ESD''). LMDC has no office of its own; the address in its Certificate of Incorporation is ``c/o NYS Urban Development Corp.'' at UDC/ESD's 633 Third Avenue address.

Pursuant to a 2-page November 5, 2001 memorandum, to the UDC/ESDC Directors from Charles Gargano, ``Subject: Lower Manhattan Redevelopment,'' a 1-page ``Authorization to Create the Lower Manhattan Redevelopment Corporation . . .'' authorized UDC/ESD's president and chief executive officer to establish a Lower Manhattan Redevelopment Corporation (sic) as a subsidiary of UDC/ESD. The New York State Department of State Division of Corporations and State Records issued a ``filing receipt'' for the Lower Manhattan Development Corporation (LMDC) on December 17, 2001. LMDC is to have ``perpetual'' duration.

According to this Certificate of Incorporation (5 pages) and LMDC's

initial By-Laws (Exhibit, A, 11 pages), LMDC was to be incorporated under Section 402 of the State's Business Corporation Law, as authorized by Section 12 of New York's Urban Development Corporation Act (``the UDC Act''). Its purposes are to exercise the ``all purposes, powers and functions'' of UDC, ``in furtherance of the implementation and management of the redevelopment of the area of Manhattan south of Houston Street [with no southern, eastern or western boundary] in the city and State of New York (said area referred to as `Lower Manhattan').''

These vast, unaccountable powers include condemnation, the power to spend unlimited Federal, State and local funds, the power to issue tax exemptions and create still more subsidiaries, and broad powers to tissue contracts, deeds and other instruments. In certain respects UDC/ESD is very much like Enron--except that its powers are broader than Enron's, since, as Robert Caro explained in The Power Broker, such quasi-public authorities partake of both all the powers of government and all the powers of a private corporation.

At least six of LMDC's directors were appointed by UDC/ESD on the advice of Governor Pataki, and at least three by UDC/ESD on the advice of Mayor Giuliani. They all serve at the pleasure of UDC/ESD, a state authority controlled by the Governor of New York State, unless they hold an official position in New York City or State. In that case alone, the Governor or Mayor can remove an LMDC board member by removing him or her from his/her official State or city position. This arrangement shields the Governor and Mayor of New York from accountability.

An organization called ``Reconstruction Watch'' lists the following 11 people as members of the LMDC board (in alphabetical order): Roland Betts (by Gov.), Paul Crotty (by Mayor), Lewis Eisenberg (by Gov.), Charles Gargano (the head of UDC/ESD), Richard Grasso (by Mayor), Robert Harding (by Mayor), Ed Malloy (president of the Building and Construction Trades Council of Greater New York and the New York State Building and Construction Trades Council) (by Gov.), John C. Whitehead (LMDC'a Chair) (by Gov.), Madelyn Wils (by Gov.), Howard Wilson (by Mayor), Deborah Wright (by Gov.), and Frank Zarb (by Gov.). Louis Tomson (LMDC's executive director) was appointed by the board. Ira M. Millstein is counsel to the board. None of the LMDC board members has a record of public service employment in environmental protection or public health agencies.

LMDC has at least five Advisory Councils, but the power resides with the Governor of New York, the man the Governor appoints to head UDC/ESD (currently Charles Gargano), and the campaign contributors, political fundraisers, and other powerful and or wealthy but unelected ``players'' who are appointed to the LMDC board.

Meetings of the LMDC board may be held without notice even to the Board, ``at any place.'' ``No such notice of any meeting need be given to any director who attends the meeting without protesting, prior thereto or at its commencement, the lack of notice to him or her. . . .'' The meeting may occur by conference call ``or similar communications equipment. . . .''

This development authority has $2 billion from the Federal Government already, according to the Daily News. It was created without any environmental review under the State Environmental Quality Review Act (the state equivalent of the National Environmental Policy Act, NEPA).

At least five pages of LMDC's Certificate of Incorporation and initial By-Laws shield the directors of this UDC/ESD subsidiary from

various kinds of liability.

5. The Federal Government (including a bi-partisan Special Committee of the U.S. Senate) should play an important implementation and oversight role over disaster recovery efforts for Lower Manhattan.

This country's greatest environmental and public health protection laws were written in, Washington in the 1970's and 1980's. They were written in Washington because State and local governments have shown over and over that they cannot withstand pressure from major campaign contributors to avoid the enforcement of State and local laws when wealthy and/or powerful campaign contributors want those laws ignored.

The disaster that resulted from a terrorist attack on the World Trade Center, may be worse than any other that has ever occurred in this country. The toxic pollutants released when the towers were pulverized--and as fires continue to burn--present wholly new air quality monitoring and remediation problems, and the pollutants in the area now (both regulated and unregulated) are likely to have synergistic affects. The health of a great number of the citizens of at least three states (New York, Connecticut and New Jersey) is at risk.

The exposures of people who work in Lower Manhattan to these pollutants is generally more than 8 hours a day, In addition, many people who live in Lower Manhattan also work or go to school in Lower Manhattan, so they may be exposed to this whole new order of pollutants 24 hours a day. Children are already suffering from increased asthma attacks; adults are getting adult-onset asthma, which they will have for the rest of their lives; and people can die from asthma attacks. This increased incidence of asthma problems may not be as bad as the lung cancers likely to show up 10, 20 or 30 years down the road--but it ought to serve as the canary in the coal mine, and prompt effective preventive actions.

Neither the State of New York, nor the City, nor, their agencies or authorities is up to the job of protecting the health of the hundreds of thousands of U.S. citizens who live, work, or go to school in Lower Manhattan. The U.S. Senate and EPA will just have to take a leading role.

6. Commercial tenants as well as resident of Lower Manhattan must be given far better information on cleanup options and techniques.--Commercial tenants are not being told that there is a difference between asbestos remediation (i.e., a gold standard office cleanup) and some other kind of cleanup. Vague ``bid proposals'' are being offered which do not list the cleanup tasks which will be performed. No Government Agency that CAC is aware of has mentioned that office carpeting should be removed if possible, and should only be replaced after post-cleaning clearance and/or re-entry testing shows that the air and any dust in the office is safe to breathe.

Decontamination chambers are generally used in asbestos-remediation-style cleanups, to keep toxic contaminants from being resuspended, Cleaned desks, file cabinets, and papers should be moved out of the office if possible, and not put back until the office tests clean.

Clean Air Campaign still has not been able to find out how many decontamination chambers one needs if the office contents cannot be moved out, and how big they need to be--i.e., whether or not two would fit into a small office.

Both the Internal Revenue Service and the State Tax Department have sent mailings to employers with payrolls in the WTC area, informing us of extended tax filing deadlines. Information on truly effective cleanups could be included in future mailings.

7. Better information on the internet.-- Any citizen anywhere in this country who wants to help devise better testing or cleanup protocols, or who wants to see what real experts (with names and affiliations) have to say, should be able to get the information--and provide it--using the internet. The Senate Environment and Public Works Committee should sponsor appropriate websites until other agencies show they are willing and able to do the job.

conclusion

It is in everyone's interest to restore air quality to safe levels in Lower Manhattan by cleaning up all possible contaminants at the source, and removing them from Manhattan. The alternative approaches aren't working (providing misleading reassurances, misspending the public funds available to solve the real problems in Lower Manhattan, and seeking to shift the costs and liability for a public health disaster, onto other parties, especially the individuals who live, work, or go to school in Lower Manhattan). Parents of schoolchildren, residents and workers who want to return (or send their children back) to Lower Manhattan have been getting sick and facing agonizing choices over the last 5 months. Before we all go to stress counselors (which we haven't had time to do), we need to have the sources of the stress removed. Those include the unprecedented burden of contaminants in Lower Manhattan.

Clean Air Campaign would be happy to provide additional information on request. We also hope there will be more U.S. Senate, House of Representatives, and EPA hearings. Finally, we would appreciate receiving a copy of the written record of this hearing, unless all the statements which have been submitted for the record are put on EPW's website.

Statement of David Koon, Chair, New York State Legislative Commission on Hazardous Wastes and Toxic Substances

Thank you for inviting my testimony as chair of the Legislative Commission on Hazardous Wastes and Toxic Substances to be entered into the record of today's proceedings.

The devastating attacks at the World Trade Center on September 11th have left emotional scars on the victims, their families, and the country. Just as important, these events have left the potential for serious long-term health impacts on the thousands of individuals who risked their lives to save others, have responded to assist with cleanup efforts, and who live and work in Lower Manhattan. I would like to commend your efforts here today to further bring to light many of the environmental health issues resulting from the events of September 11th.

As the chair of the Assembly's Hazardous Waste and Toxic Substances Commission, my office has been closely monitoring the developments of reported health effects of contaminate exposure to workers and residents of Lower Manhattan.

As the rescue, recovery and cleanup efforts have progressed, issues regarding worker safety as well as residential exposure have come to the forefront. Environmental monitoring data has not been consistently provided to the public, and government agencies have been criticized for not releasing environmental data sooner. After the initial delay in posting environmental data, a clear picture of the extent of the contamination and its implications for public health and the environment remains elusive.

There are a number of factors that have contributed to the general unease and anxiety over environmental monitoring information. The delay in making test results publicly available and the failure to reveal all

information that EPA used to make public health determinations, further exacerbated the situation. In addition, the test results of independent consultants, some whom had been previously hired to perform environmental monitoring analysis after the 1993 World Trade Center bombings, were dismissed, citing that their ``testing methods weren't recognized.''

The confusion and skepticism expressed by many people regarding environmental monitoring and testing at the World Trade Center site has resulted, in part, because there is no clear legal or regulatory framework in place to deal with the type and magnitude of the disastrous building collapse. The environmental and public health impacts caused by the sudden, complete and unplanned destruction of the office buildings in Lower Manhattan are not directly addressed at either the Federal or State legal levels. In attempting to determine what levels of environmental exposure to chemicals are ``permissible'' or ``acceptable'' has left government officials looking to statutes and regulations that would have applied in a normal building construction and demolition scenario, and the amounts of chemicals that could be legally permitted to enter the air under those statutes. The laws and regulations that are being referenced address many substances including asbestos exposure to workers, asbestos clean-up requirements, hazardous waste content of debris, and fine particulates in the air.

More than 20 thousand people live within \1/2\ mile of Ground Zero, close to three thousand of them are children. As I am sure you will repeatedly hear during today's proceedings, many workers and residents within the Lower Manhattan area are reporting similar health symptoms: nosebleeds, sore throats, bronchial infections and an ``endless racking cough'' more commonly referred to as the ``WTC Cough.'' Several students who attend nearby Stuyvesant High School have reported cases of skin rashes, nosebleeds, headaches, respiratory infections, and eye infections. Three Stuyvesant High School teachers have left due to respiratory illnesses. Approximately one-fourth of the city's firefighters involved in rescue and cleanup activities complain of severe coughing. FDNY has reported that approximately 750 firefighters, 8 percent of its work force, are on medical leave. Several hundred of these individuals may be forced to retire from the Department. More than one thousand have filed claims against the City. In early January, four Port Authority officers were reassigned after blood monitoring tests revealed high mercury levels.

While government test analysis show asbestos and other contaminate levels generally fall below the standards set for safe human exposure, health officials remain concerned about long- and short-term health impacts of these exposures. Officials have publicly stated that their knowledge on related-health impacts is based on long-term exposure. There is no precedent for a disaster of this magnitude and many health implications remain unknown.

Acting on public concern, the Assembly Speaker, whose District encompasses the World Trade Center site, convened a public hearing in November to examine the public health and environmental impacts of the terrorist attacks. Witnesses included panels of elected officials, community groups, government agencies and representatives from environmental, health and labor organizations. The recurring themes of the hearing were the same: inadequate testing methods, particularly outside the perimeter of Ground Zero; better coordination of communication between the agencies conducting the testing and releasing information; extensive health concerns for workers onsite at Ground Zero; and inadequate action taken to protect the public from the

hazards of pollutants released by the 11-week-long fire.

The Assembly hearing testimony confirmed that despite the well-intentioned efforts, communication between the various governmental agencies and the public was inadequate. While the enormity of the incident was unprecedented and the need to initially concentrate all resources on emergency and recovery efforts is certainly understandable, subsequent governmental actions failed to reassure the public about their health and safety. The discrepancy in testing methods and results has created much anxiety for the residents and workers in Lower Manhattan. The failure of government to conduct residential indoor air testing and subsequently allow residents to reoccupy their homes may result in real long-term health concerns, particularly in children and the elderly.

Further, very little information has been provided regarding water quality in the World Trade Center area. Upon a recent visit to EPA headquarters, Assembly staff witnessed cleanup workers spray washing the dust and debris from the sides of the buildings. While the workers wore protective face gear, the runoff simply emptied into the street, dropping on scaffolds on the sidewalks as pedestrians walked underneath and around them, simply changing the pathway of exposure.

It serves no public interest to point fingers and blame as we move forward from this great national tragedy. Moreover, as the City moves ahead with cleanup and redevelopment efforts, let us work together to regain the public's trust by establishing better communication between governmental entities regarding who is testing what area and for which contaminants. Develop consistent reporting methods to inform the public of all potential health impacts that exist. Testing methods themselves need to be the most stringent and protective of the public health and environment available. Improvements in all these areas will help to allay fears of the public, thereby allowing them to make informed decisions.

Thank you very much. We would be happy to provide you with information collected by the Commission staff as well as a copy of the Assembly's hearing transcript and testimony given at those proceedings.

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Statement of Patricia R. Dillon, New York, NY

My sincere thanks to the committee, and to Senators Clinton and Lieberman, for today's hearings regarding health and environmental problems in Lower Manhattan related to the September 11th World Trade Center disaster.

I am a resident of the Tribeca neighborhood and I also work in Lower Manhattan--at 80 Centre Street. My mild respiratory difficulties--seasonal sneezing and itchy eyes, and an occasional cough caused by New York City's normal poor air quality--have been greatly exacerbated by the current, ongoing problems with recovery and ``cleanup'' (I hesitate to use that word, since what precious little cleanup is occurring is being done in the most sloppy and dangerous manner).

When I leave the city for a few days, my coughing stops and my breathing eases, so I know that these difficulties are due to my virtually constant exposure to the air near Ground Zero. I am assured by the Department of Health and other public agencies that I will certainly suffer no long-term ill effects. But, how can I trust any of these Government agencies when it is clear that they have obfuscated, covered up and outright lied about what they do know, and given us the worst possible advice about how to deal with the situation. Wet-mop indeed! What about the air-intake vents on the roofs of apartment

buildings, which are sucking in toxins from the never-been-cleaned roofs and distributing them throughout all the air ducts in the buildings?

Why is New York City not mandating building owners to do environmentally safe cleaning of their buildings, and why is the Federal Government not reimbursing the owners for doing it? FEMA, as well as NY State agencies and the Red Cross, is throwing money at individual victims for rent, mortgage payments, food, etc., but we are told there is no money available for environmental cleanup. That is insane!

There are hardly any protocols being followed for the environmental cleaning of building interiors or exteriors, or for roads and streets. Washing of the roadways around Ground Zero and along the routes to the barges is happening much less frequently in the past month, even though there is just as much airborne toxic dust and debris in our neighborhood as ever. Recycled water could be used if drought is the excuse; salt/sea water could be used if freezing temperatures are the problem.

Some of the trucks carrying the debris to the barges at Pier 25 are still operating uncovered and minimally wetted down; the barges, once loaded, have never been covered. Why on earth not?

The initial sitting of the barges next to a high school, across the street from a college, and four blocks from three other schools, speaks volumes about the lack of concern for the health of our children. They--and the thousands of residents nearby--are clearly in danger! I understand that it is probably too late in the process of debris removal to move the barges to a less dangerous location, but I do not see why the cleanup contractors cannot be obligated to follow the strictest environmental safety procedures.

Can the committee take action to ensure that the barge operation at Pier 25 will be dismantled when the cleanup is completed, and that any new barge operation in the post-cleanup/construction phase will be located in a less heavily residential area, such as Canal Street or Pier A near Battery Park?

Who is responsible for the cleaning of the sidewalks--especially those around our schools--which are always dusty and littered with debris?

Can the committee help residents with testing of apartments and building interiors and, if contaminants are found, enforce environmentally safe cleaning?

Can you find a way to enforce the cleanup of roofs and building exteriors, to prevent constant re-contamination of the downtown area? Or get it done by a Federal Agency?

Will you initiate and fund studies on the effects of multiple contaminants, and on the best cleanup methods, and then enforce the best possible guidelines?

Will the committee press for a health study immediately, to look at immediate effects, and for followup studies on a regular schedule (every 6 months or yearly)?

Will the committee introduce legislation providing for free medical care for WTC disaster-related illnesses, now and in the future, for those being exposed to poisons in our environment that are being swept under the rug by our Government?

Will you investigate and report on:

EPA's double standards in re the thorough cleanup of their own Lower Manhattan offices vs. the complete disregard of all other office space?

The decision to reopen downtown residences?

Air quality data gathered during the first 2 weeks after the disaster that seems to have been withheld from the public?

Finally, what is the plan for decontaminating the Fresh Kills landfill after current activity ends?

Thank you for any help you can give us.

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Statement of Sondra Levin, Former Chairman, NYC Group of the Sierra Club

The New York City Sierra Club is dismayed that misinformation and lack of enough information has been provided by the city Health Department and the Federal Environmental Protection Agency about the significant amount of air pollutants from the World Trade Center disaster.

The city health department under the Giuliani administration also gave misinformation about massive pesticide spraying over the city during the past 3 years. Former Mayor Giuliani falsely claimed the spraying was safe when pesticides used and the way they were used were unsafe. As a result of the spraying, many people became sick and the city's environment was contaminated. The exact extent of the damage is still unknown, but it was significant.

The city Sierra Club is dismayed that heroic rescuers of the World Trade Center disaster including firefighters and police were exposed to air pollution without proper protection.

The city Sierra Club advocates that the World Trade Center site and surrounding buildings affected by air pollutants be cleaned up at public expense according to the highest safety standards.

We highly commend Senator Hillary Clinton for spearheading an investigation to find out how much of a problem exists, since that is still unclear. Complete information and action is needed to avoid compounding the tragedy of the World Trade Center disaster.

Letter from Edward Fluss, New York, NY

Hon. James M. Jeffords, Chairman,
Committee on Environment and Public Works,
Washington, DC.

Senator:

I want to be clear and I want this message for the record to be simply understood.

Have any of you any clue what is going on in downtown Manhattan? I say you do not have a clue. Perhaps you have not visited, perhaps you don't look up at the buildings still standing. Perhaps you are afraid like I am that you will get sick.

Have any of you visited any building in downtown Manhattan? I repeat any building?

Look out ANY window and look to any building and you will see dust still on the window sills and glass of all buildings downtown! This dust is contaminated with all sorts of toxins--yes asbestos included! Need proof? Call me-212-231-5139 and I will show you pictures and provide you with samples.

More insane, yes I use the word insane is the fact that the buildings surrounding Ground Zero such as the Deutche Bank building to the south of Ground Zero stands open with broken windows filled with dust and debris from September 11th! That dust is still, yes still today, February 19, 2002, blowing out of the building onto men, women and children living, working and attending school in the area!

I'll repeat: Yes, the dust packed office space is open and dust is blowing out of the building onto citizens such as myself, into

apartments such as my apartment in 600 Gateway and polluting the downtown area each day, every day 24 hours a day!

How can this contaminated building be standing and absolutely open to the environment and to people living and working in its vicinity! I ask again how can this be? This is a private building but why isn't it wrapped in a plastic bubble or something?

There must be action taken by someone or some institution. The EPA is failing, The NYC DOH is failing. Government is failing us all here!

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Kathleen Ewald,
Brooklyn, NY., February 22, 2002.

Committee on Environment and Public Works,
U.S. Senate,
Washington, DC.

Senators: I live in a part of northwest Brooklyn called Carroll Gardens, which is right on the East River, approximately 2 miles southeast of WTC. The wind on September 11th blew the dust and debris straight over this part of Brooklyn.

That morning, I had accidentally left my air conditioner turned on. In my panic over finding family and friends (phones were barely working)--let alone my fear that the entire city was being destroyed--I failed to realize that the air conditioner was running. It wasn't until that night, that I realized I was smelling the dust and debris that was falling on my neighborhood in my house, that I turned off the air conditioner. I coughed through the night and into the next morning. Then I watched Christie Whitman at the site on TV saying the dust/air was only dangerous if you were at the site. I had fine brown dust around my bedroom, not the inches of dust they were showing in apartments near the site. I followed the advice to clean up dust with wet rags. At the same time, I was incredulous that people were supposed to clean up their own apartments.

Outside, in my neighborhood, there was an inch of brown soot on everything. Homeowners brushed it off their stoops and into the streets.

Then I went on with my life. I followed instructions: ``Don't panic. Be strong. We can't let the terrorists win.'' I spent my Fridays volunteering at a Brooklyn charity that gave financial aid to September 11th victims.

In returning to work in NoHo on September 13, I was hit by air that smelled like pure chemicals. I felt like my lungs were closing up.

Still, officials continued to say the air was safe. I particularly remember newspaper articles quoting officials who said that any respiratory irritation was temporary and would pass. Around this time Whitman also announced that our air ``is safe to breathe.''

I ignored my symptoms for weeks, then realized that they were not going away. In an ER in late October, I was diagnosed with reactive airways disease. A pulmonologist did pulmonary function tests and confirmed it further, calling it asthma.

I don't smoke, and I never had asthma before September 11th.

My symptoms don't end there. I have frequent headaches and stomach burning, a symptom of GERD, which MSNBC recently reported is a common symptom of WTC Syndrome sufferers.

Late last year, I started reading the articles on Joel Kupferman's website. Andrew Schneider's recent articles on (a) how the EPA used 20-year-old methods to measure asbestos and (b) the withholding of information as to the causticity of the dust finally scared me into the realization: This stuff is still in my house and I've been sleeping in

it and breathing it in since September! This is why I'm still sick!

I hired an environmental testing company. They did not find asbestos in the samples they took, but they did find pulverized fiberglass--and lots of brown dust. Attempting to clean it up myself was apparently NOT the thing to do. I am currently having it re-tested for other chemicals.

I had the apartment HEPA vacuumed. I suppose my apartment is clean now. But it's 5 months later, and I don't know what toxins are coursing through my veins or turning into cancer in my lungs. I was a completely healthy young woman a year ago. Now I don't know what's going to happen to me, and I'm terrified.

Had we been told: The dust is caustic! Fiberglass is a carcinogen! The dust isn't just dangerous at WTC, it's dangerous in every neighborhood where the wind took it on September 11th! If you have a bit of dust in your house, leave immediately, don't clean it yourself with wet rags! . . . Had we been told that, I'm sure I would have responded differently. But I believed what we were told, and now I'm paying the price.

Sincerely yours,

Kathleen Ewald.

State University of New York, University at Albany,
Rensselaer, NY, February 8, 2002.

To the Parents of Children in PS 89: It was my pleasure to address the parents and teachers at PS 89 last Tuesday night where I could explain why, in my opinion, it is not safe to re-occupy the building at this time. This letter is to put in writing these reasons, and also to tell you more about who I am.

In 1980 I came to Albany as the Director of the Wadsworth Laboratories of the New York State Department of Health. The major event which brought me to Albany was related to Love Canal, which was the first time in our history when people became aware of the hazards of chemical wastes in our communities, and event with many commonalities to the WTC attack. I became the Dean of the School of Public Health at the University at Albany in 1985. When I resigned as Dean in 1998, I became the Director of the Institute for Health and the Environment, a research and teaching Institute directed at protecting health. I have considerable expertise on issues related to children's environmental health, as evidenced by the fact that I have been the organizer of two meetings on this subject in Asia, sponsored by the U.S. National Institutes of Health and the World Health Organization.

Children are much more vulnerable than adults to the effects of environmental contaminants, but most of the standards that have been set by EPA and other Federal and State agencies are based on effects (often occupational) on adult white males. Therefore, in order to protect children it is essential that one add safety factors over what is proposed for adults. Furthermore, it is not appropriate to be concerned only with immediate, acute health effects, but also to protect children from cancer and other chronic diseases which may appear many years after the exposure to toxins. In my judgment no one has demonstrated that PS 89 is safe for reoccupancy at present, and indeed the evidence presented is clear that it is not safe. The reasons for this conclusion are as follows:

Air-borne particulates are dangerous to everyone. They can triggers asthma attacks in vulnerable individuals, and may even cause asthma and other respiratory diseases. While the EPA standard of an 8-hour work

day for adults is 65 ng/m3, EPA has set a level of particulates in air of 40 ng/m3 for adults with respiratory or cardiac disease. This value is also applied to children. The level of particulates measured in PS 89 was greater than 40 ng/m3 on 5 of 11 days tested, and on 3 days even the average sample was greater than this value, while on a fourth ,day the average was 39.9 ng/m3. On days when the outsider particulate levels were high, the insider levels were high. Therefore, the present filtering system is not preventing particulates from getting into the building. There is, at present, no convincing evidence that the technique used for these measurements is invalid. On the basis of these readings, alone, the school should not be re-opened. There is certainly adequate evidence for asthma, coughs and other kinds of breathing disorders in persons exposed at other sites near the WTC, and children should not be in the school building until the particulate levels are definitively documented to be below 40 ng/m3 at all times.

Most usual particulates are simple products of combustion, and contain only small quantities of toxic chemicals. This may not be true near to the WTC, since there is clear evidence that dioxins, furans, PCBs, asbestos and several metals were released during the collapse and fires. Thus, even if the particulate levels are below the magic number of 40 ng/m3, it is essential to demonstrate that the particulates do not contain toxic substances at high concentration. This is done by collecting either the particulates from an air filter or the dust from surfaces, weighting the sample, and then determining the relative percentage of the weight that is toxic. This has not be done. There have been some measurements of toxins in air and on surfaces, but not on the basis of weight. Furthermore, some of the measurements done have been totally flawed. For example, the sensitivity of the measurement of PCBs in air was so low that the smallest value that could be detected was 4.2 times greater than the occupational standard for adult white males, and even that value would not be protective of children.

Other health experts recommend no outdoor play at times when the particulate levels are high. This is a wise recommendation, but the same recommendation applies to the inside environment.

In my judgment parents have the right, and indeed the responsibility, to demand that the indoor environment of PS 89 be proven to be safe from both acute and long-term health hazards before the building is reoccupied. There is presently no such evidence, and too much doubt to justify re-occupancy at the present time. We must not repeat a Love Canal by making decisions in haste that may adversely affect the health of our children.

Sincerely,

David O. Carpenter, M.D.,
Professor.

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Response by Antonia Godsey to Comments from Walter E. Mugdan, Regional Counsel, U.S. EPA

NYSBA Environmental Law Section Annual Meeting, January 25, 2002
Re: Response to Remarks

Thank you for your presentation at the New York State Bar Association Environmental Law Section Meeting on January 25, 2002 addressing the air quality in downtown Manhattan. My response to your comments will address the concerns I have about the health risks associated with exposures to contaminated dust found near the WTC site and the extreme need for EPA to take a more active role in monitoring and conducting a responsive clean up of the interior of apartment

buildings and office spaces in downtown Manhattan as well as the interior of homes where rescue workers and construction workers live and may have tracked contaminated dust into homes.\1\

\1\ It was mentioned at the NYSBA in comments made by EPA representative, Ms. Callahan, that ``EPA conducted a professional abatement of its office building; by professional contractors and under strict asbestos guidelines, because FBI personnel who were entering the building had come directly from the site and thus may have tracked contaminated materials into the building''. (My notes taken at meeting January 25, 2002).

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stringent control measures should be enforced to address toxins in the air near the wtc site

The Mugdan comments note the importance of emphasizing the NESHAPS regulations along with the significance of the Clean Air Act, yet, in the same breath the comments go on to state that, ``the regulations do not apply to the cleaning of WTC dust from apartments or offices:'' \2\ In particular you state that ``the Clean Air Act (CAA) authorizes EPA to regulate the protection of outside air and not indoor air.'' \3\ The neighboring vicinity of the WTC site has become a great concern among a number of people who live and work within the community. Just this past week, FOX News and USA Today reported that EPA continues to downplay the potential air quality problems at the WTC site. There are a number of professionals who have commented on the potential for dangers associated with the known and hazardous pollutants identified in downtown Manhattan,\4\ yet EPA continues to assert interpretations of the law that skirt the issue.

\2\ Mugdan comments NYSBA meeting, January 25, 2002 ELS at page 11, para 5 at FN 12.

\3\ Mugdan comments NYSBA meeting, January 25, 2002 ELS at page 10, para 2.

\4\ See Statement of Marjorie Clarke, Ph.D., State Assembly Committee on Environmental Conservation public hearing on health matters resulting form the September 11th WTC attacks submitted November 27, 2001 and statement of Cate Jenkins, Ph.D., USEPA Preliminary Assessment Hazardous Waste Identification Division January 11, 2002 and UC Davis News and Information, Trade Center Air Held Unprecedented amounts of Fine Particles . . . Metals Say Scientists, UC Davis Delta Group, February 11, 2002. www.news.ucdavis.edu

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The Mugdan comments cite the Clean air Act (CAA), the National Emission Standards for Hazardous Air Pollutants (NESHAPS), the Toxics Substance Control Act (TSCA) and Asbestos Hazardous Emergency Response Act (AHERA)\5\ as authority for the EPA reasoning to refuse to enforce regulations for the quality of indoor air. In the interpretation of these regulations, the Mugdan comments provide the definition of the words ``renovation'' and ``demolition'' and their meaning under NESHAPS. These comments go on to state that: the definition for ``renovation'' cannot plausibly be stretched to include the cleaning of WTC dust that reached apartments and offices'' \6\ (in downtown Manhattan). When considering the meaning of a statutory phrase, one must consider not only the ordinary meaning of the words but also the meaning of the words in light of the purpose, context and structure of the entire statute of which the phrase is apart.\7\

\5\ Section 112 CAA 42 USC Sec 7412 and NESHAP codified at 40 CFR Part 61, subpart M; AHERA amendment to TSCA 15 USC Sec 2641 and 40 CFR Part 763, subpart E. Sec 7630.80 et seq.

\6\ Mugdan comments NYSBA meeting, January 25, 2002 ELS at page 12, para 4.

\7\ American Mining Congress vs. USEPA; 263 US APP. D.C. 197, 824 F 2d 1177, 1184-85 (D.C. Cir: 1987).

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sampling results are finding levels above the maximum threshold that can be dangerous to human health

Hazardous substances are presently documented near the neighboring vicinity of the site and in some cases were found to be above the maximum standards allowable for the protection of human health. A sample of 2.2 percent chrysotile\8\ (asbestos, ACM) was found inside of an apartment building on Pine Street in downtown New York, a few blocks away from the site.\9\ In light of this information there is a strong presumption that ACM is present in other apartments and office buildings in the same vicinity. This creates a serious concern and has caused a number of people to give attention to the issue of whether the WTC site and vicinity should be classified under. CERCLA as an emergency measure to respond to the threat of further hazardous substance releases. Under CERCLA it is noted that,

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\8\ Chrysotile currently accounts for more than 99 percent of world asbestos consumption; e.g. asbestos cement construction products, asbestos cement pipe, roofing tiles, sheeting and fibers combined with resin to produce temperature resistant linings. Researchers now believe that the carcinogenicity of the fibrous substance is related to several physical and chemical characteristics. www.asbestos-institute.ca/crg/crgcontent.html Article entitled, Chrysotile Reference Guide, Asbestos Family of Fibers, Asbestos Related Disease, data from world consumption production 1984-1994.

\9\ Test results from ATC Assoc. Inc. NY Bulk Asbestos Analysis Sheet PLM results Field No 315, 2.2 percent chrysotile October 10, 2001, Batch No. 3068, published at nyenvirolaw.org.

> Upon receipt of information that there is a hazardous waste at any site which may present an imminent and substantial endangerment to human health, the administrator shall provide an immediate notice to the appropriate local government agencies. In addition, the administrator shall require notice of such endangerment to be promptly posted at the site where the waste is located.\10\

\10\ Title 42 Chp 82 Subchapter VII Sec 6973 (c) Immediate Notice.

Consider the relationship between CERCLA and TSCA: e.g. the Toxic Substance Control Act (TSCA) authorizes the EPA to control existing chemical substances determined to cause an unreasonable risk of injury to public health or the environment and to take action with respect to chemical substances which are imminent hazards.\11\ Under TSCA, Title I and Title II, (AHERA amended in 1990 ASHARA) EPA should be obliged to monitor and sample the air inside of buildings in downtown Manhattan where a serious threat to human health potentially exists.\12\ Likewise, under CERCLA an action may be brought, consistent with the National Contingency Plan, if necessary to respond to the release of a hazardous substance imminently dangerous to public health.\13\ CERCLA

provides several complimentary mechanisms to effectuate hazardous substance removal. It was designed by Congress to protect and preserve public health and the environment. Under the statute, the Federal Government may conduct its own removal of hazardous substances which includes such action as may be necessary to monitor, access and evaluate the further release of a hazardous substance; the disposal of removed materials and the taking of any such other action as may be necessary to prevent, minimize or mitigate damage to the public health or welfare.\14\

\11\ TSCA Title I--Control of Toxic Substances--includes provisions for regulating hazardous chemicals substances and mixtures with provisions for managing imminent hazards Title II--Asbestos Hazard Emergency Response Act (AHERA, Pub. L. 99-519), which was amended in 1990 by the Asbestos School Hazard Abatement Reauthorization Act (ASHARA, Pub. L.101-637) to require the accreditation of persons who inspect for asbestos containing material in schools and public and commercial buildings. It also authorizes requirements for the accreditation of persons who design or conduct response actions with respect to friable asbestos containing material (ACM) in such buildings. See infra.

\12\ Guidance for Controlling Asbestos Containing Materials In Buildings [EPA 560/5/85-024]: Introduction to the problem of asbestos in buildings and guidance for coping with the problem, 6/85; USEPA Office of Pollution and Prevention of Toxics.

\13\ 42 USC Sec 9605 CERCLA/SARA Sec 105 (4)(d) National Contingency Plan--Any person who may be affected by a release or a threatened release of a hazardous substance or pollutant or contaminant, may petition the President to conduct a preliminary assessment of the hazards to public health and the environment which arc associated with such release.

\14\ Id The term ``removal'' means the cleanup of a hazardous substance in the environment and any such other actions that may necessary in the event there is a threat of release of a hazardous substance; CERCLA 42 USC Sec 9601 (23) removal defined at (Sec 101) and (106)(a).

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epa has not rebut the presumption that acm is present in dust samples above the threshold requirements

In an OSHA Administrative decision that came before the DC Circuit last year in December 2001, petitioners sought review of a decision and Court Order imposed by the OSHA Review Commission.\15\ There, the court found that a company performing abatement activities committed 10 violations of the Asbestos Construction Standards promulgated at 29 CFR. Sec 1926.1101. It was noted that the company failed to use the required sampling methodology for asbestos abatement. Under the regulations, a building owner must identify all installed-thermal: system insulation and surfacing materials found in any building built before 1980; as it is presumed that ACM material is present.\16\ The regulation provides a means to rebut the presumption by following specified testing requirements. The OSHA Commission ruled that ``an owner who fails to use specified testing methods to identify the presence of ACM fails to rebut the presumption that ACM is present in a building.'' \17\ The U.S. Court of Appeal for D.C. agreed that ``when specified methodology does not follow regulatory requirements a company will be found to have not exercised reasonable diligence in its asbestos abatement analysis.'' \18\ Similarly, EPA Government officials

have failed to come forward with adequate notice to the public and has failed to use due diligence in investigating this matter. In New York City, at and near the WTC site there is a strong presumption that ACM, along with other potentially innocuous dust, is present inside of buildings.\19\ EPA has not necessarily provided any proof to rebut the presumption that ACM and a dangerous mix of other potential toxins may be present in dusts found in occupied buildings and office spaces downtown.

\15\ Odessey Capital Group III. L.P. d/b/a Cascade Apartments v. OSHA Review Commission and Secretary of Labor No. 01-1030, 2001 U.S. App., Lexis 27797.

\16\ Id see Odyssey Capital Group, III, L.P.

\17\ Id see Odyssey Capital Group III, L.P.

\18\ Id see Odyssey Capital Group III. L.P.

\19\ There may be certain synergistic interactions between some of the compounds that may be present in the dust that is unknown since ambient air standards are for individual pollutants. See Statement of Marjorie Clarke, Ph.D. State Assembly Committee on Environmental Conservation Public Health Matters November 26, 2001; Also see UC Davis News & Information article entitled Trade Center Air Held Unprecedented Amount of Very Fine Particles . . . February 11, 2002. www.news.ucdavis.edu and www.nyenvirolaw.org

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piecemeal control of the risks associated with acm is not satisfactory

Comments and proposals published in the Federal Register January 29, 1986 relating to 40 CFR Part 763 (the proposal of a rule under Section 6 of TSCA)\20\ provides supplementary information that takes into consideration EPA's former objective, back in 1986, with regards to consumer products containing asbestos material. Under the proposed rule it is noted that:

\20\ In 1986, EPA proposed a rule under Section 6 of Toxic Substance Control Act (TSCA) to prohibit the manufacture, import and processing of asbestos in certain products and to phaseout the use of asbestos in all other products.

> Asbestos, since the advent of it's widespread use, has resulted in thousands of painful premature deaths from lung cancer and other diseases.\21\ Because of the widespread use of asbestos and its particular nature, piecemeal control of the risks it presents is not satisfactory; only elimination of asbestos to the extent feasible will produce acceptable reduction of risks.\22\

\21\ Mesothelioma occurs in the pluera (the membrane that surrounds the lung cavity) and the peritoneum (which surrounds the abdominal organs); Asbestosis involves fibrosis of the lungs and plural tissues; USEPA FR. Vol 51 No. 19 p. 3741.

\22\ Asbestos Proposed Mining and Import Restrictions and Proposed Manufacturing, Importation and Processing Prohibitions: USEPA; Federal Register Vol 51, No. 19; Wednesday, January 29, 1986; Proposed. Rules; (comments made by EPA Administrator William Rielly).

This discussion presented by EPA in 1986, goes on to address the serious and well-documented studies linked to asbestos as a carcinogen, a cause of lung disease and an alarming threat to human health. In

particular, the threat is insidious due to the unique quality of its fiber which has aerodynamic features that allow the fibers to become easily suspended and re-suspended in the air, transported on clothes, and able to travel long distances.\23\ Once released asbestos fibers are difficult to detect and contain and they continue to readily enter the ambient air. Persons may be exposed not only at the time and place of release but long after the release has occurred. There is a constant renewal of risks as asbestos fibers re-enter the atmosphere repeatedly over time.\24\ According to sampling results taken by EPA the suspension of numerous toxins including asbestos has been identified in exceeding limits in various sampling results that have been published on the New York Law and Justice Project NYLJP) website and EPA website.\25\ With this in mind, it may be appropriate to take exceedingly stringent precautions when sampling and monitoring for contaminant dust in downtown Manhattan, including the bulk sampling of interior of buildings.

\23\ Id FR Vol 51, no 19 p. 3738.

\24\ Id FR Vol 51, no 19 pp. 3738-39.

\25\ www.nyenvirolaw.org Laboratory Analysis Report, conducted by ATC Associates, accredited by NVLAP (Lab code 1187-00 and NY State DOH ELAP (Lab ID 10879), states that samples that are layered and analyzed by the gravimetric method as composite (NESHAPS, AHERA) should be considered positive if results are between trace and 1 percent, unless every layer is analyzed separately.

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the dangers associated with the release and re-release of toxic dust may be harmful to health

The National Research Council Committee on Non-Occupational Health Risks of Asbestiform Fibers has adopted a linear no threshold model to estimate the risks to non-occupational populations from exposures to asbestos in the environment.\26\ Despite the known risks of asbestos, continuous release of asbestos fibers will occur if downtown Manhattan buildings with occupied apartments and office spaces are not cleaned properly.\27\ Leaving the abatement process up to resident owners is not in compliance with The Asbestos Hazard Emergency Response Act (AHERA, Pub. L. 99-519), which was amended in 1990 by the Asbestos School Hazard Abatement Reauthorization Act (ASHARA, Pub. L. 101-637) to require the accreditation of persons who inspect for asbestos containing material in schools and public and commercial buildings. It also authorizes requirements for the accreditation of persons who design or conduct response actions with respect to friable asbestos-containing material in such buildings.\28\ At a minimum, EPA should be overseeing the cleanup of downtown buildings to assure that adequate abatement is being carried out by accredited persons, not only in schools but also in public and commercial buildings. Under the regulations, public and commercial building is defined as:

\26\ Id at 3742-43 The derivation and validation of the models is discussed in detail in ``EPA's Regulatory Impact Analysis of Controls on Asbestos Products''.

\27\ Id at 3742-43 and also see UC Davis News and Information article entitled: Trade Center Air.

\28\ AHERA 40 CFR 763, Appendix C to subpart E--Asbestos Model Accreditation Plan.

the interior space of any building which is not a school

building. . . . The term includes, but is not limited to: industrial and office buildings, residential apartment buildings and condominiums of 10 or more dwelling units, government-owned buildings, colleges, museums, airports, hospitals, churches, preschools, stores, warehouses and factories. Interior space includes exterior hallways connecting buildings, porticos and mechanical systems used to condition interior space.\29\

\29\ Id at Appendix C to subpart E--I. Asbestos Model Accreditation Plan (A)(6).

Furthermore, under the Federal regulations, EPA is supposed to provide extensive technical assistance programs which provide guidance to public and private building owners for the safe removal of asbestos dust during abatement projects.\30\ Substantial health risks are potentially present among building occupants, office workers and the general population where asbestos contaminated dusts still lie dangerously embedded within carpets, around window sills in ventilation systems and in corners of dwelling spaces inside of buildings where dust has settled both near and several blocks away from the WTC site.\31\

\30\ Id.

\31\ An apartment building located on Pine Street levels of asbestos which are above threshold safety standards. See FN 8.

As you know, the health effects of exposure to asbestos dust can be devastating. Repeated reports that attempt to downplay the danger suggest that short-term exposures may not be serious. This may not necessarily be true. Many years of studies have been undertaken to identify the potential risks associated with occupational exposures and studies have been conducted on populations exposed to airborne concentrations of asbestos for relatively long periods of time.\32\ However, please note, that there is direct evidence of adverse health effects from non-occupational asbestos exposures among persons living in households of asbestos workers who have developed mesothelioma and asbestos related radiographic changes in a persons lungs.\33\ A number of mesotheliomas have also been documented among populations whose only identified exposure was from living near asbestos mining areas, asbestos product factories and shipyards where asbestos use has been very heavy.\34\ People may encounter higher than average environmental asbestos concentrations in air if they live near an asbestos containing waste site or asbestos related industry of if they live or work in a building that has undergone a poorly performed asbestos removal operation.\35\

\32\ See Federal Register Environmental Protection Agency Asbestos Proposed Mining and Import Restrictions . . . Vol 51 No 19 January 29, 1986 Proposed Rules pgs. 3742-3743.

\33\ Consumer Product Safety Commission Report; A study based on findings of the National Institute of Environmental Health, 8th Report on Carcinogens: Asbestos; As a result of these and other findings, EPA amended the Asbestos Worker Protection Rule (40 CFR 763). Under the Supplementary information Sec II (A)(5) The economic consequence of this rule states: ``EPA has found that this rule is likely to result in other benefits such as asbestosis cases being avoided among workers,

with reduced exposures to worker families from asbestos fibers being brought home on clothing. . . .

\34\ Id; and the International Agency for Research on Cancer (IARC) Vol 14, Sec 7, 1986 and FR Vol 51, No 19 p 3741; January 29, 1986.

\35\ Id.

Inclusive in the sampling and abatement of the interior of buildings in downtown Manhattan should be an accounting, sampling and abatement of the homes-of rescue workers and contractors who worked at the site prior to the use of proper protocol during the emergency. Many workers were working under conditions that were not adequately monitored under adequate quality-control methods. In the early days during the aftermath of the tragedy, workers did not have quality controlled change rooms for decontamination after human exposure at the site; nor did workers utilize proper worker techniques for minimizing risks of exposures.\36\

\36\ See Testimony Before the Environment Committee of the New York City Council on the Public Health Concerns Resulting from Exposures in the Wake of the Collapse for the WTC Towers Submitted by Barbara J. Olshansky and Nicole Pollier (3rd Year CUNY Law Legal Intern) Center for Constitutional Rights New York, NY p. 6 of 10 (www.nyenvirolaw.org). ``Preventive measures must be taken to achieve compliance,'' dated November 1, 2001.

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overview of abatement for construction projects and worker protection

The need for proper working techniques for minimizing fiber release and future potential contamination episodes was acknowledged early on when the National Institute of Environmental Health Sciences issued a report in October 2001 stating that ``there was no evidence or even suggestion that any safety health program was operative at the WTC site and workers continued to work for days lacking in any compliance with worker protection regulations.''\37\

\37\ Id at p4 of 10; This report is cited in the testimony before the Environmental Committee of the New York City Council; by the Center for Constitutional Rights; November 1, 2001.

Training of workers at the site is incorporated in the following overview, of regulations: NESHAPS 40 CFR Part 61 subpart A&M; EPA Worker Protection Rule, (40 CFR Part 763 subpart G); OSHA Asbestos Construction Standard (29 CFR 1926.58); OSHA Respirator Requirements (29 CFR 1910.134); Asbestos; Model Accreditation Plan for States (40 CFR 763 Subpart E Appendix C (1) and any other applicable Stateand local or Federal regulations that may apply. Under the OSHA Asbestos Construction Standard (2 CFR 1926.58) there are requirements for notification of other contractors on a multi-employer site with the need for proper training and safe working conditions for a number of potential hazards including the minimization of the potential for contaminated major or minor fiber release episodes.\38\ EPA must seriously consider classifying the WTC under Superfund.\39\ Design and construction techniques have been flawed and innocent workers have been needlessly exposed to exceeding levels of contaminant dust at the site.\40\ The use of non-air supply respirators and the lack of protective suits may have also placed workers at a high risk. The presence of asbestos and other known chemicals found at this site are highly regulated under industry standards and cutting corners in lieu

of a fast demolition project displays a serious weakness on the part of EPA along with Stateand local authorities. Proper working techniques for minimizing risks to workers include adequate sampling and design stages, proper maintenance of containment barriers, decontamination enclosure systems, electrical ventilation systems, entry and exit procedures, positioning of warning signs; use of negative pressure exhaust systems, ventilation equipment, proper clean up and disposal methods, work practices that may apply to encapsulation; proper selection, inspection, donning use, maintenance and storage procedures for respirators.\41\

\38\ Major fiber release episode means any uncontrolled or unintentional disturbance of ACBM, resulting in a visible emission which involves the falling or dislodging of more than 3 square or linear feet of friable ACBM.

Minor fiber release episode means any uncontrolled or unintentional disturbance of ACBM, resulting in a visible emission which involves the falling or dislodging of 3 square or linear feet or less of friable ACBM.

\39\ Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

\40\ See Center for Constitutional Rights Report Testimony before NYC Environment Committee, November 1, 2001 at page 4-5 of 10.

\41\ OSHA Requirements for Abatement Construction Projects 29 CFR 1926.58; also see NESHAPS, TSCA, AHERA and CERCLA, supra.

Once it is concluded that a proper remedial action will take place in the WTC downtown area, (including the proper clean up of inside of buildings) defensive actions should begin as soon as possible to prevent and mitigate any future damage to human health or the environment. Section--300.65 (b) of the National Contingency Plan expressly provides that an agency be given wide latitude in selecting the appropriate response to a perceived threat to human health.

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Queller, Fisher Dienst, Serrins, Washor & Kool, LLP,
February 4, 2002.

Leecia Eve, Esq.
Senator Hillary Rodham Clinton,
Washington, DC.

Dear Ms. Eve: Further to our conversation of yesterday morning, enclosed is a letter which was sent to the Captains, Lieutenants and Detectives of the New York City Police Department regarding exposure to toxic substances as a result of their work either at Ground Zero or the Staten Island Landfill.

For your information, thousands of police officers including Captains, Lieutenants and Detectives have been assigned to Ground Zero and the Staten Island landfill on a round-the-clock basis since September 11, 2001.

The landfill received the wreckage from the World Trade Center. Detectives were specifically assigned to the landfill and tasked to pick through the debris in the hopes of locating evidence which could prove helpful to the overall investigation. Unfortunately, many officers were not provided with the necessary protective equipment on a consistent basis.

We do not know the long-term health effects which may result due to their exposure to the various toxic substances both at Ground Zero and the landfill. We would like to appear at the hearing scheduled for

February 11, 2002 and propose that a legislative mechanism be implemented to preserve the rights of New York City police officers who may become ill many years hence with an illness-related to their work at the sites.

The letter I have enclosed is self-explanatory on this issue, specifically beginning on the last paragraph of page 2.

I do not anticipate that our presentation would last more than 10 minutes.

Thank you in advance for your consideration.

By: Phillip E. Karasyk.

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Queller, Fisher, Dienst, Serrins, Washor & Kool, LLP,
January 4, 2002.

As part of legislation intended to ``bail out'' the airline industry after the September 11, 2001 tragedy, Congress passed a statute known as the ``September 11th Victim Compensation Fund of 2001. While it is difficult to summarize the new law in any brief fashion, it essentially provides that those injured, or the families of those killed, can avoid bringing lawsuits to obtain traditional jury-awarded damages for their losses.

It provides that the Attorney General shall appoint a Special Master to administer a compensation program. Special forms have been drafted to allow claimants to set forth the nature of their injuries or that their loved one was killed and to further provide detailed information regarding economic and non-economic losses. Non-economic losses mean such things as physical and emotional pain, loss of enjoyment of life, mental anguish and other types of loss.

The statute provides that once a claim is submitted, the Special Master will have 120 days to render a decision on the amount of damage, if any, to be awarded. Within 20 days thereafter, he will authorize payment of the claim. The decision of the Special Master is final and cannot be appealed.

The main benefits of this Special Master system include the fact that there is no need to bring a lawsuit. The system provides for a prompt resolution of the claims; whereas lawsuits take many years. The Association of Trial Lawyers of America has pledged to represent any claimant without charge. There will be no legal fees. Our firm will certainly be available to any member or their family on a pro bono basis to assist in the claim process should you choose to participate.

The system, however, is not without problems.

The main concern is the language in the statute that provides that all ``collateral sources'' received by the claimant shall reduce the amount of any award from the Special Master. Collateral sources include life insurance, pension funds, death benefit programs and all payments by Federal, State or local governments. It is not clear whether this reduction will apply to the claim in its entirety or to specific portions of the claim. It is not clear whether collateral sources would include any moneys received from charity. It is also unclear in the case of a death of a police officer who leaves children, whether their potential awards for loss of parental care and guidance would be reduced by the collateral source.

If one participates in the claim process, a lawsuit cannot be brought against anyone.

I strongly suggest that members and their families hold off making a final decision on whether to bring a lawsuit or file a claim under the Government's system until certain issues, particularly those

concerning collateral sources, are resolved by regulation or by decision of the Special Master. Additionally, you should consult with an attorney from our firm before making any decisions.

The statute provides that claimants have two (2) years from the date that the Special Master promulgates regulations regarding the details of the procedures to bring a claim. Thus, the statutory time period has just begun.

Lawsuits for wrongful death against the airlines are governed by a two (2) year statute of limitations from the date of the death. If any claim is to be brought against the Port Authority, the time limit is one (1) year with a requirement that a Notice of Claim be filed at least 60 days before the institution of a lawsuit.

With regard to those members exposed to toxins at the World Trade Center site or the Fresh Kills Land Fill site or any other exposure related to the attack, many of you have heard via the rumor mill that Notices of Claim with the city of New York must be filed by January 7, 2002 to protect their right to sue New York City for injuries received while working at the site.

The Civil Procedure Law and Rules which govern the timeframe in which Notices of Claim against the City must be filed makes a significant exception to the 90-day filing requirement for a Notice of Claim against New York City for:

> personal injury or injury to property caused by the latent effects of exposure to any substance or combination of substances, in any form, upon or in the body or upon property shall be deemed to have accrued on the date of discovery of the injury by the plaintiff or on the date when through the exercise of reasonable diligence the injury should have been discovered, whichever is earlier. CPLR Sec. 214(c)(3).

This exception recognizes the fact that illnesses of the type which may be caused by exposure to harmful substances may not become apparent for many months or years after the exposure.

Thus, the 90-day claim period begins from the time the member is aware of any potential injury sustained as a result of exposure to toxins. It is believed that many law enforcement officers were exposed to elevated levels of asbestos, dioxins, dangerous metals, polynuclear aromatic hydrocarbons, respirable silica and many other types of hazardous materials. If you believe that you were exposed to any such toxin, or if in fact you were at the site following the September 11th attack, we believe the best cause of action to follow in order to protect your right to sue New York City is to report a Line of Duty illness and document your condition by visiting your doctor. Once your medical doctor has made a diagnosis, contact us immediately. We will evaluate your particular situation and advise you regarding the procedure to follow in filing a Notice of Claim.

Please bear in mind that in our opinion only medical conditions capable of causing significant impairment of your health and/or ability to function in your daily life will stand any chance for significant recovery in a cause of action against New York City. You should also be aware that although you are obligated to file a Notice of Claim within 90 days of learning or discovering an injury, should that be done and should your case be resolved prior to manifestation of any serious illness, a settlement with the City based upon a filed lawsuit may have the effect of precluding you from recovering damages commensurate with the illness discovered after the settlement of your lawsuit. Therefore,

it is essential that you discuss these issues with our attorneys.

To those members who have already been diagnosed with any exposure-related illness such as asthma, bronchitis, reduced lung capacity, etc., the time in which to file is 90 days from the date of discovery of the injury including a statutory toll for the 30 days following September 11th. Therefore, time remains to file your claim and our law firm will be happy to prepare these claims on your behalf. When you contact us please be able to provide the date of exposure, the date first seen by a medical provider and the diagnosis of that condition.

Please be aware that actions filed as outlined in this letter will not preclude you from filing for an accidental disability pension.

I realize that this memorandum may raise numerous questions in your mind, therefore, feel free to contact me at my office and we can go over these issues in greater detail.

Very truly yours,

Philip B. Karasyk,

Queller, Fisher, Dienst, Serrins, Washor & Kool, LLP.

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Statement of Susan S. Abbot, M.P.H., New York, NY

Dear committee members: I was unable to attend the committee meeting at the U.S. Customs House in Lower Manhattan and am now submitting my testimony for your review.

My husband and I are long-term residents of Battery Park City (10 years). Since September 11, 2001, we have waited patiently for a Federal, State, or NYC government authority to issue standards for abatement and clean up of residential buildings in Battery Park City, to no avail. Since the EPA deferred its responsibility for assuring the safety of residential buildings (i.e. free from contaminants and carcinogens, not structural) to the NYC Department of Health (NYCDOH), and since the NYCDOH has done nothing to this end, we are hopeful this committee will be able to quickly remedy this problem, and within a short timeframe reassure residents of Lower Manhattan that it is truly safe to live there.

We were shocked shortly after September 11, 2001, that Christine Whitman issued a statement indicating that the air quality in Lower Manhattan was safe and presented no danger to long-term health and that it was safe for residents to return to their homes after clean up of the dust. There are two important issues here (1) the outdoor air quality is not the issue and (2) at least in my building, clean up of the dust (contaminated with at least asbestos) was not done using proper asbestos abatement procedures.

My family (husband and two small children) and I live in Gateway Plaza: a complex of six buildings on the corner of South End Avenue and Liberty streets (the closest complex in Battery Park City to the WTC site). Before deciding whether or not to renew our lease we decided to have the apartment and the building tested by a certified environmental company. Although, as you know, there are a variety of contaminants we could have tested for, we limited our testing to asbestos.

Briefly, I would like to give you the data I, and a neighbor of mine (Sharon McGarvey 365 South End Ave., Apt. 2F) have gathered documenting the contamination of our particular buildings. The testing was done by an accredited firm, Donohoe Environmental, and the samples were analyzed by the TEM method for asbestos by EMSL Labs (also accredited). I have enclosed the results of the tests I had done on my apartment, the buildings ventilation system (ducts in the hallways and in the apartments), the exterior of the building, and the building hallway carpeting. These wipe samples were all taken after the building

was supposedly cleaned. Most samples, particularly in the ventilation system, the hallway carpets, and on the exterior of the building were positive for moderate to high levels of asbestos. Even though the air levels of asbestos were low, asbestos is easily disturbed and becomes airborne, having it in the vents and the carpet, and on the exterior of the building means it will eventually end up in the air or on your feet and therefore in your apartment.

In Summary: As defined by EMSL lab:

1,000 structures/cubic centimeter = low level of asbestos
10,000 structures/cubic centimeter = moderate level of asbestos
100,000 structures/cubic centimeter = high level of asbestos

Result summary:

Hallway vent (385 South End, 7th floor): 51.114 structures/cubic centimeter.
New air conditioner/heating unit--4,259 str/cc.
Child's bedroom window (outside)--30,666 str/cc.
Hallway vent--32,031 str/cc.
Hallway carpet--1,635. str/cc.
Other hallway carpet 6,815 str/cc.

Results from other neighbors had even higher levels on their apartment vents and the hallway carpets.

The only solution we can see is for one agency (be it Federal, State, or local) to define contaminant and abatement standards for residential buildings is Lower Manhattan and mandate repeated on-going clean up of the ventilation systems of residential buildings, repeated washing of the exterior and roofs of the buildings, and removal of the common area carpets until a sufficient time after the demolition of the WTC site is complete that we can be assured no recontamination will occur. This mandatory cleaning should be monitored with repeated wipe testing for asbestos and other contaminants done by one agency and made readily available to all residents.

While doing my research into what methods were appropriate for testing for contaminants, I consulted a number of publications by Cate Jenkins, Ph.D. (from the EPA) (jenkins.cate@epa.gov). She recommended wipe or microvacuum samples as the only practical way to see if a building is contaminated in this situation (not air samples). Also, a number of sources stated that even if air level are less than 1 percent asbestos could pose a risk because asbestos fibers can become airborne. There is no threshold safe level for exposure to asbestos particularly for children.

We look forward to your timely response and action in this matter.

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[New York Environmental Law & Justice Project, February 2002]

Downwind From Disaster

The dust from the WTC is unlike any other. It is a powder created by the implosion and burning of over 200 floors of a skyscraper and everything and everyone in them. There are thousands of chemicals present in that dust, not just asbestos, lead, dioxin, and the pitiful handful of chemicals being tested. Yet based on this paltry data, the New York City Department of Health declares ``the general public's risk

for any short- or long-term adverse health [effects] is extremely low.''

Short Term Effects.--We already know that short-term health effects are seen among the heavily exposed firefighters. Twenty-five percent of them have been diagnosed with occupational asthma and related diseases.

But people exposed only for a few hours also are sick. A Guide to Clinicians from the Department of Community Medicine of Mt. Sinai School of Medicine states that ``Conditions that have been seen in adults who have been at or near the site for as little as 24 to 36 hours, include reactive airways disease, new onset or exacerbation of preexisting asthma, RADS [reactive airway disease], sinusitis, irritant rhinitis, persistent cough, and diffuse irritation of nasal mucosal surfaces.''

The Mt. Sinai Clinician's Guide also includes ``Residents of the surrounding communities'' as an exposed population. Mt. Sinai doctors such as Stephen Levin, have treated residents living 6 and 7 blocks from the site.

The WTC mobile medical unit has screened hundreds of day laborers for respiratory ailments with between \1/4\ and \1/3\ exhibiting ``Significant respiratory affect'' such as cough, shortness of breath, sore throat, dizziness and headaches after weeks of cleaning contaminated twin towers dust from Lower Manhattan home and office buildings, and has hundreds on waiting lists.

Long-Term Effects.--Some effect which occur in the short-term also become long-term effects. For example, people who have developed asthma from the dust are likely to find this become a life time problem. Some of the components of the dust can cause the ultimate long-term effect: cancer.

Cancer.--The dust contains many carcinogens: asbestos, the many dioxins and PCB compounds, and some of the metals such as chrome and nickel. The fiberglass commonly found in the dust is also listed by the National Toxicology Program as ``reasonably anticipated to be a human carcinogen.''

Asbestos.--On carcinogen, asbestos, has especially worried scientist Cate Jenkins, a 22-year employee of EPA. She has written several memorandums about errors that have lead the NYC DOH to underestimate the risk to workers and residence for asbestos related cancers. In the latest release, Cate Jenkins uses the word ``coverup'' in describing the behavior of the health department.

Other Data.--Andrew Schneider at the St. Louis Post Dispatch has reported that the U.S. Geological Survey tested the dust immediately after the disaster and e-mailed data all government contacts by September 27. But New Yorkers were never told that the USGS found some of the dust was as caustic as liquid drain cleaner. The USGS also found that the dust contained heavy metals, especially chromium and aluminum. These data were ignored as well.

Toxic Smoke.--For months, smoke billowed from the 16-acre caldron that was the Trade Center complex. Deep in the earth, a month after the fires were declared out, there are still materials burning according to the EPA. (Callahan, January 25, 2002).

No one knows the effects of the components of this smoke. No one knows the combined effect of all the chemicals and particulates in the dust. The EPA admitted that it did not account for synergy. We are promised further studies. Unfortunately, it is the firefighters, police, construction workers, and downtown residents that are the lab rats.

The Federal Government has cleaned up many of its own buildings

with full abatement while failing to protect the safety and well being of people who work and live in downtown New York.

The New York Environmental Law & Justice Project calls upon the EPA to take over the clean up under the National Contingency Plan, and calls upon all agencies to be forthcoming with data and information. See our website for further information www.nyenvirolaw.org.

nyeljf concurs with nycosh's statement in response to heath department findings

Statement by Joel Shufro, executive director of the New York Committee for Occupational Safety and Health in response to ``NYC Department of Health Presents Findings from indoor Air Sampling in Lower Manhattan,'' released at 4 p.m. on Friday, February 8. [The Department of Health document is at http//www.ci.nyc.ny.us/html/doh/html/public/press02/pr08-208.html]

We find it extremely disturbing that the Department of Health has published such an uninformative and confusing report that raises more questions than it answers. The people of New York City have an urgent need for useful and accurate information, not obfuscating and baseless reassurances.

The report literally raises more questions than it answers:

Were the indoor air and dust samples taken in areas that had already been cleaned up?

Were the indoor air samples taken under aggressive sampling conditions?

What method was used to obtain the samples?

What method was used to analyze the samples?

What, specifically, were the results of the tests?

What is an ``elevated level of asbestos''?

Were samples taken in any heavily contaminated buildings?

Why, more than a month after the last samples were taken, are the results of the air samples for fiberglass not available?

How many dust samples were taken, and how many contained asbestos, and how much asbestos did each of them contain?

What does ``low levels of asbestos in some samples'' mean, specifically? What levels, in how many samples?

Is the Department of Health aware of any safe level of exposure to asbestos? If so, what is it?

Why are residents being advised to clean up dust when ``some'' of the dust contains low levels of asbestos?

Why does the report contain no information about or advice concerning respiratory protection?

In fact, the Department of Health release makes it clear that some of the tested dust contains asbestos, which confirms the EPA recommendation that workers and residents in Lower Manhattan should assume that untested dust contains asbestos.

According to the EPA tests, more than three-quarters of the dust samples contain some asbestos. Thirty-four percent of the EPA samples contain between 1.1 and 4.49 percent asbestos.

Under city law and State law, it is illegal for anyone who does not have an asbestos handler's license to clean up any significant quantity of dust that is more than 1 percent asbestos. The Department of Health is inviting New Yorkers to put themselves at potentially grave risk, when it advises workers and residents how to clean up untested dust themselves.

No one who is not properly trained, equipped and licensed should clean up untested dust that could be contaminated with asbestos. But if an untrained, unlicensed person does clean up untested dust that could

contain asbestos, they should wear appropriate (HEPA) respiratory protection to minimize their exposure.

The Department of Health report states that ``the likelihood of developing disease from limited, short-term, low-level exposure [to asbestos] is low.'' It is true that the likelihood of developing disease is lower from low-level exposure than it is from high-level exposure, but without any accurate data about exposure levels, it is impossible to characterize the level of risk.

More than 25 years ago the U.S. Congress wrote this finding of fact into the Asbestos School Hazard Detection and Control Act, and nothing has been learned since to contradict it ``Medical science has not established any minimum level of exposure to asbestos fibers which is considered to be safe to individuals exposed to the fibers.''

We urge anyone who is considering cleaning up a residence or a workplace, and anyone who is in a residence or a workplace that has not been cleaned up by a licensed asbestos abatement contractor, to follow the instructions and advice in our factsheet, ``Cleaning Up Indoor Dust and Debris In the World Trade Center Area,'' posted on the NYCOSH website at http//www.nycosh.org/wtc-dust-factsheet.html.

For more information, contact NYCOSH at 212-627-3900. Fax 212-627-9812. E-mailwtc@nycosh.org

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Memorandum from Cate Jenkins, Ph.D., U.S. Environmental Protection Agency

Date: February 10, 2002

Subject: LNYC Department of Health Misrepresentations, February 8, 2002 Press Release: ``NYC Department of Health Presents Findings from Indoor Air Sampling in Lower Manhattan''

From: Cate Jenkins, Ph.D.\1\

\1\ The conclusions and opinions in this memorandum are those of the author and do not necessarily reflect those of the U.S. Environmental Protection Agency.

To: Affected Parties and Responsible Officials

A February 8, 2002 press release from the New York City Department of Health (NYC DOH) (attached) contains an interpretation of preliminary data from a study not yet released by the Agency for Toxic Substances and Disease Registry (ATSDR) of the Centers for Disease Control (CDC). This study conducted tests in apartments and buildings in Lower Manhattan which were impacted by fallout from the collapse of the World Trade Center (WTC).

The ATSDR does not plan releasing the study or preliminary results to the public until spring, so it is difficult to determine whether or not the NYC DOH correctly represented the data. However, there is at least one major clear misrepresentation of the data by the NYC. There is evidence of other misrepresentations as well.

airborne asbestos

The NYC DOH made the following claim in its press release:

The air samples from inside the buildings showed no elevated levels of asbestos. (NYC DOH)

The DOH does not mention in its press release exactly what the

level of asbestos would be considered ``elevated.'' However, the press release refers readers to the NYC Department of Environmental Protection (NYC DEP) for more information. The cited NYC DEP web page (attached) states that the ``safe'' level, or standard, is 0.01 fibers per cubic centimeter (f/cc) (which is the same as fibers/milliliter):

> The U.S. and NYC standard for asbestos in community and residential buildings is 0.01 fibers/cubic centimeter (f/cc) [same as f/mL] in Indoor air. . . . As testing continues, there may be the possibility of occasional short-term increases in levels of asbestos in the air above the residential standard of 0.01 f/cc of air. [NYC DEP]

This is a misrepresentation. Due to the many public discussions over the safe level of asbestos in air, there can be no misunderstanding on the part of either the NYC DOH or DEP that the residential or ambient air standard of the U.S. Environmental Protection Agency (EPA) is 0.01 f/mL. By law, any State or city standards for asbestos must be at least as stringent as the Federal EPA standard.\2\

\2\ The EPA itself has erroneously referred to the AHERA TEM test level of 70 structures per square millimeter a ``standard'' on its website at http://www.epa.gov/epahome/wtc/activities.htm.

EPA standard for asbestos

The EPA standard for asbestos in indoor and outdoor air is found in its Integrated Risk Management Information System (IRIS), attached, and other public documents. It is the policy and goal of EPA to protect at the 1 in a million cancer risk level (10^{-6} risk level), the point of departure. In all cases, action by EPA is triggered by any risk greater than 1 in 10,000. The EPA air standards for asbestos in inside and outside air at the different risk levels are given in the table below:

Cancer Risk Level		Air Concentration of Asbestos fibers per milliliter (f/mL), ``PLM'' fraction of fibers over 5 micrometers long
number of cancers	risk level	
1 in 1,000,000.....	10^{-6} (=E-6).....	0.000004 f/mL (=4E-6 f/mL)
1 in 100,000.....	10^{-5} (=E-5).....	0.00004 f/mL (=4E-5 f/mL)
1 in 10,000.....	10^{-4} (=E-4).....	0.0004 f/mL (=4E-4 f/mL)

The safe level and goal of EPA, the actual air standard, is 0.000004 f/mL, and the action level for EPA to trigger a cleanup is 0.0004 f/mL. The EPA standard is thus 2500 times lower than the 0.01 f/mL level claimed to be the standard by the NYC DOH and DEP.

It is particularly important to test asbestos at the 10^{-6} risk level, because other carcinogens and possible carcinogens are potentially present in WTC fallout, including fiberglass, dioxins, PCB's, and heavy metals. If several are present, the carcinogenic risk could be additive and result in a higher aggregate cancer risk.

Origin of NYC claim that their standard and the U.S. standard is 0.01 f/mL

The NYC DOH and DEP are apparently basing their claim that the standard is 0.01 f/mL on a particular test that must be conducted while using a one-horsepower leaf blower to stir up all the asbestos in a room after certified professional abatement. This is the AHERA TEM clearance test (Asbestos Hazard Emergency Response Act transmission electron microscopy).

The EPA regulations for conducting the AHERA TEM clearance test are contained in Title 40 of the Code of Federal Regulations, Part 763, Appendix A. Regulations are implementations of statutes, and thus are the law and legally binding. States and cities must adopt these regulations or have more stringent regulation. The AHERA TEM clearance test is a TEST, not an air STANDARD. Nowhere in any of the EPA regulations is the 0.01 f/mL level called a ``standard'' for air. The procedures for this test are given in part below:

> 40 CFR-Chapter I-Part 763
> Appendix A to Subpart E--Interim Transmission Electron Microscopy Analytical Methods--Mandatory and Nonmandatory--and Mandatory Section to Determine Completion of Response Actions . . .
> II. Mandatory Transmission Electron Microscopy Method
> A. Definitions of Terms
>
> 1. Analytical sensitivity--Airborne asbestos concentration represented by each fiber counted under the electron microscope. It is determined by the air volume collected and the proportion of the filter examined. This method requires that the analytical sensitivity be no greater than 0.005 structures/cm 3 . . .
>
> 14. The final plastic barrier around the abatement area remains h place for the sampling period.
>
> 15. After the area has passed a thorough visual inspection, use aggressive sampling conditions to dislodge any remaining dust. (See suggested protocol in Unit III.B.7.d.) . . .
>
> 17. A minimum of 13 samples are to be collected for each testing site consisting of the following:
>
> a. LA minimum of five samples per abatement area.
>
> b. LA minimum of five samples per ambient area positioned at locations representative of the air entering the abatement site. . . .
>
> [Unit III.B.] 7. Abatement area sampling.
>
> a. LConduct final clearance sampling only after the primary containment barriers have been removed; the abatement area has been thoroughly dried; and, it has

passed visual inspection tests by qualified personnel. (See Reference 1 of Unit III.L.)
b. LContainment barriers over windows, doors, and air passageways must remain in place until the TEM clearance sampling and analysis is completed and results meet clearance test criteria. The final plastic barrier remains in place for the sampling period.
c. LSelect sampling sites in the abatement area on a random basis to provide unbiased and representative samples.
d. LAfter the area has passed a thorough visual inspection, use aggressive sampling conditions to dislodge any remaining dust.

I. LEquipment used in aggressive sampling such as a leaf blower and/or fan should be properly cleaned and decontaminated before use.
II. LAir filtration unit shall remain on during the air monitoring period.
III. LPrior to air monitoring, floors, ceiling and walls shall be swept with the exhaust of a minimum one (1) horsepower leaf blower.
IV. LStationary fans are placed in locations which will not interfere with air monitoring equipment. Fan air is directed toward the ceiling. One fan shall be used for each 10,000 ft 3 of worksite.

[40 CFR 763, App. A]

The reason that the EPA designed the AHERA TEM clearance test, requiring first certified asbestos abatement procedures followed by a leaf blower, and then a fan, followed by air testing to the 0.01 f/mL (PCM) level (equivalent to 0.02 s/mL or 70 structures per square millimeter) was to save costs and time. EPA found that using a leaf blower increased asbestos concentrations in air by thousands of times. One study showed that using a leaf blower increased airborne asbestos concentrations over 100 times that caused by even vigorous broom cleaning.\3\ Vigorous broom cleaning has been demonstrated to increase asbestos levels hundreds or thousands of times over that of passive conditions which do not disturb dusts. Testing at the low levels that are actually those of health concern, 0.000004 f/mL, can often take 24 or more hours, which was found to be impractical for asbestos abatement contractors.

\3\ Millette, J., et. al. Applications of the ASTM Asbestos in Dust Method D5755. In: Advances in Environmental Measurement Methods for Asbestos, ASTM Special Technical Publication 1342.

Even if testing is done at the low levels associated with asbestos health effects (0.000004 f/mL), there must be human activities or simulated human activities in the same room at the same time of the testing. When testing airborne asbestos levels inside homes in Libby, Montana, the Superfund site, EPA had both stationary air monitors and monitors worn by residents going about their normal daily activities. See the attached risk assessment for the Libby site for a description. Another study showed that asbestos concentrations in air can be

undetectable or below 0.005 f/mL when there are no activities in the room to stir up dusts, but as high as 0.09 to 54 f/mL when activities such as vacuuming, broom sweeping, gym activities, etc. are going on in the room to disturb the dusts.\4\

\4\ Millette, J.R., and Hays, S.M. (1994), Chapter 8, Resuspension of Settled Dust, in: Settled Dust Sampling and Analysis, page 63, Table 2, Lewis Publishers, ISBN 0-87371-948-4.

The following table gives the legal/legitimate and illegal/illegitimate ways to determine whether asbestos levels in air in homes, offices, or schools meets EPA standards:

Legal/Legitimate Airborne Asbestos Testing Methods	Illegal/Illegitimate Airborne Asbestos Testing Methods
0.000004 f/mL (PCM) laboratory sensitivity (detection limit), the EPA safe level.	0.01 f/m (PCM) = 0.02 s/mL (all fibers) = 70 structures per square millimeter.	0.000004 f/mL (PCM) laboratory sensitivity (detection limit), the EPA safe level.	0.01 f/m (PCM) = 0.02 s/mL (all fibers) = 70 structures per square millimeter.
Conditions of actual or simulated human activities, such as a child jumping on a contaminated couch or rolling around on contaminated carpet.	Testing for this level ONLY AFTER the following conditions, as required by law in 40 CFR 763: (1) Completion of activities professional certified asbestos abatement; (2) Suspension of dusts by using one-horsepower leaf blower followed by fans during actual testing.	Passive conditions, i.e., no activities to disturb dusts to cause them to be airborne.. This level under either passive testing conditions (no human activity) or even normal human

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Probable testing methods of the CDC's ATSDR

Although we do not know what methods the ATSDR used to test air

inside buildings, it is doubtful that they utilized techniques that can detect asbestos at the 0.000004 f/mL level. If the ATSDR did test at this low level, it is unknown whether there were simulated or actual human activities taking place at the same time to disturb the dusts.

It is also doubtful that if they tested the air using less sensitive methods, that they used the aggressive leaf-blower condition required for tie AHERA TEM test. It would be impossible to use the aggressive leaf-blower test conditions in currently occupied spaces, as it could contaminate surfaces that had previously been cleaned. However, this is no excuse, since there are plenty of unoccupied apartments and business spaces which could be sealed off and tested, and contaminated carpeting and upholstered furniture from the same building could be placed in the space to be tested. (It would be a minor cost to purchase the carpeting or furniture from other tenants in the building.)

indoor dust testing

The NYC DOH described the results of the indoor dust testing as follows:

> Testing was also conducted in four buildings above 59th Street to provide information on the background level of various substances present indoors in New York City.
>
> The analysis of 98 dust samples for asbestos taken from the inside and outside of residential buildings in Lower Manhattan indicated that while a 20 percent were above background levels, only two samples which were taken from outdoors required abatement. Professional abatement work was completed in this area.
>
> Samples taken from inside and outside of residential buildings in Lower Manhattan were analyzed for fibrous glass. Fibrous glass was detected in 43 of the 98 samples taken. The results of air sampling for fibrous glass, and for air and surface testing of other materials, are not yet available.

It is alarming that 20 percent of samples from indoors (or this could be both indoors and outdoors) were over background levels. Although it was not stated, there could also be more than 20 percent of the indoor dusts that had detectable levels of asbestos, but which were not over background. At the Libby, Montana Superfund site (see attachment), only 11 to 23 percent of the indoor dust samples had detectable asbestos from the random homes selected in Phase 1 of the Libby investigation.

It is also inappropriate for the NYC DOH to establish background by going to other areas of Manhattan. The buildings above 59th Street could have been contaminated with WTC fallout, or could be contaminated from other sources of asbestos These ``background'' buildings might also have unsafe levels of asbestos and require professional abatement. It is an unfair comparison to imply that only 20 percent of the inside building dusts in Lower Manhattan had elevated levels that required abatement, based on a comparison to levels in buildings above 59th Street, which might themselves be unsafe.

The finding of fibrous glass (fiberglass) in 44 percent of the samples is also alarming. It is also unfortunate that the ATSDR did not test for other hazardous substances, such as dioxins, PCB's, and heavy metals such as mercury.

outdoor dust testing

The NYC DOH made the following statement regarding outdoor dusts:

> The analysis of 98 dust samples for asbestos taken from the inside and outside of residential buildings in Lower Manhattan indicated that while 20 percent were above background levels, only two samples which were taken from outdoors required abatement. Professional abatement work was completed in this area.

Although the NYC DOH does not state what level they consider to be a ``safe'' level in the outdoor dusts that triggered professional abatement, it can be deduced. The NYC DEP issued a letter on October 25 to residents of Lower Manhattan, stating that professional abatement was only necessary if indoor dusts contained 1 percent asbestos or higher. See attached.

The 1 percent asbestos level is not considered to be a ``safe'' level by the EPA. It is not a risk-based number. It was developed to apply to the asbestos products themselves that were used in homes and other buildings, because it was found that these products always contained 1 percent or more asbestos. The dusts in a building that used these asbestos materials would always have lower levels of asbestos than the asbestos materials themselves. The EPA regulations require the removal or management in-place of the asbestos materials (at 1 percent asbestos or higher) and then the thorough abatement of all contaminated surfaces, whether containing 1 percent asbestos or not.

EPA has determined that levels of asbestos lower than 1 percent could present hazards.\5\

\5\ www.epa.gov/region8/superfund/libby/qsafe.html

> Levels of 1 percent or less could present a risk where there is enough activity to stir up soil and cause asbestos fibers to become airborne.

In one independent study, it was found that soils containing only 0.001 percent asbestos were still capable of producing measurable airborne asbestos concentrations greater than 0.01 fibers per milliliter (equivalent to structures per milliliter), which is an air concentration thousands of times higher than the EPA safe level of 0.000004 f/mL.\6\

\6\ Addison, J. (1995) Vermiculite: a review of the mineralogy and health effects of vermiculite exploitation. Reg. Tox. Pharm. 21: 397-405.

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conclusions

The CDC's ATSDR should immediately provide the public with all the information and data that it has supplied to the NYC DOH, so that an honest evaluation can be made. Through its misrepresentations, NYC DOH is giving the public a false sense of security and the erroneous belief that exposures to asbestos and fiberglass are not hazardous, and also that there are no other hazardous substances present because the ATSDR did not test for them. Since the full study will not be released until spring, there are many months that may go by with additional needless exposures, particular during unsafe cleanups by citizens themselves.

It is a violation of the Administrative Procedures Act and the Sunshine Act for a Federal entity such as the ATSDR to provide

preferential treatment to the NYC DOH by the early release of preliminary data without simultaneously releasing the same data to the public. The fact that the NYC DOH requested the study does not entitle it to receive any results prior to the public.

Oftentimes industry, public interest groups, or even individual citizens request studies by Federal agencies. When any data resulting from these studies is released, it is released to all parties simultaneously. The NYC DOH has no special standing in this regard.

list of attachments

This version of the memorandum does not contain the attachments, because it has been difficult for some to open the file with the attachments. However, you can access the same documents from the websites listed with the attachments.

You can also access this memo with all of the attachments at either: www.NYenviroLAW.org or http://cbns.qc.edu/asbestos[5]--references.pdf

You can download Adobe Acrobat Reader Version 4.0 for free from a very dependable, easy, safe website at: http://www.adobe.com/products/acrobat/readstep.html

NYC Department of Health (February 8, 2002) NYC Department of Health presents findings from indoor air sampling in Lower Manhattan. Posted at: http://www.nyc.gov/html/doh/html/public/press02/pr08-208.html or www.NYenviroLAW.org

NYC Department of Environmental Protection. (Undated) Air, noise and hazardous materials. Web page posted at http://www.nyc.gov/html/dep/html/airnonit.html

U.S. EPA (August 2001) Integrated Risk Management Information System (IRIS) Summary for Asbestos, posted at httn://www.epa.gov/iris/subst/0371.htm

USEPA (2001) Appendix A to Subpart E--Interim Transmission Electron Microscopy Analytical Methods--Mandatory and Nonmandatory--and Mandatory Section to Determine Completion of Response Actions, 40 CFR--CHAPTER I--PART 763. Posted at: www.epa.gov/epahome/cfr40.htm

Miele, J.A., Commissioner, NYC Department of Environmental Protection (October 25, 2001) Letter to Residents of Lower Manhattan. Posted at www.NYenviroLAW.org

Weis, C.P., Senior Toxicologist/Science Support Coordinator, U.S. EPA (December 20, 2001) Excerpts from: Amphibole mineral fibers in source materials in residential and commercial areas of Libby pose an imminent and substantial endangerment to public health. Posted at: http://www.epa.gov/region8/superfund/libby/riskassess.html

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Statement of Jane Kenny, Regional Administrator, Environmental Protection Agency

Good morning Mr. Chairman and members of the subcommittee. I am Jane M. Kenny, Region 2 Administrator with the U.S. Environmental Protection Agency (EPA). I welcome this opportunity to join my Federal, State and city colleagues to discuss the ongoing response to the tragic events of September 11th by EPA.

Today is February 11, 2002. It has been 5 months since that terrible day. After months of incredibly intense work, we can now reflect on the impacts of the attacks and the extraordinary efforts made by so many individuals and government at all levels. EPA and our Federal, State and city partners have all played important roles in the protection of public health and the cleanup efforts. Today, we look toward the future and the ultimate recovery of Lower Manhattan.

On the morning of September 11th, EPA responded immediately as events unfolded. Our emergency response teams were on the scene that day in Lower Manhattan, in Brooklyn, where the smoke plume was moving, and in New Jersey--assessing the possible public health and environmental impacts of the attacks. Let me assure you that EPA's highest priority then and throughout this response has been protecting the health of everyone in the New York metropolitan area.

Since September 11th, EPA and other Federal, State and city agencies have taken over 10,000 samples of dust, air, drinking water, and storm water runoff at and around the World Trade Center site. We have also sampled in Brooklyn, Queens, the Bronx and Staten Island, at the Fresh Kills landfill and in New Jersey.

In addition to the monitoring conducted by our Federal, State and city partners, we have tested for the presence of pollutants such as asbestos, fine particulate matter, lead and other metals, volatile organic compounds, dioxin, PCBs and other substances that could pose a threat to the public and workers at the site. These samples are taken from more than 20 fixed monitoring stations at and around Ground Zero and an existing New York State air quality-monitoring network that was augmented for the World Trade Center response. The agency also uses portable sampling equipment to collect data from a range of locations in Lower Manhattan. Fortunately, the vast majority of our tests continue to find levels of these contaminants below standards or guidelines set to protect public health. We have also found that environmental conditions on and off the site have improved considerably over time.

While this news may be reassuring to the general public, it is important to emphasize--as we have from day one--that the risks are different for response workers at the World Trade Center site; they have been working long hours in dusty and what were very smoky conditions. That is why we have repeatedly said that response workers should wear respirators and other protective gear.

We have found asbestos fibers in some of the outdoor air and dust samples taken at Ground Zero and in the surrounding area. To date, out of more than 5,500 outdoor air samples taken at and around the site, only 15 have had levels of asbestos that exceed the Asbestos Hazard Emergency Response Act or AHERA standard, we use to determine if children can re-enter a school building after asbestos has been removed or abated. Of the15 exceedances, all but four were recorded before September 30.

Where we found elevated levels of asbestos in the dust or where dusty conditions were observed, EPA used large HEPA vacuum trucks to pick it up. We've cleaned sidewalks, the promenade at Battery Park City, local playgrounds and parks and even children's sand boxes. EPA has led the effort to monitor the outdoor environment with support from the New York State Department of Environmental Conservation (DEC), while the city of New York has taken the lead for the reoccupancy of buildings.

We do know that some people returning to area homes and businesses have found dusty environments. EPA recommends that interiors be cleaned with the assumption that any dust may contain asbestos. The New York City Department of Environmental Protection (DEP) has issued instructions to building owners and managers directing them to use professional asbestos inspectors to assess the presence of asbestos-containing materials and to use licensed abatement contractors to conduct any necessary cleanup work. EPA, the Department of Health and Human Services through the Agency for Toxic Substances and Disease

Registry (ATSDR) and the New York City Department of Health (DOH) has recommended ongoing and frequent cleaning to minimize future risks from any dust that might remain. All cleanups should be done using wet wipe methods on surfaces and vacuums with HEPA--high efficiency particulate air-filters.

Regarding some Federal buildings, EPA took a small number of indoor air samples in several buildings. The General Services Administration changed the filters on the air conditioning systems and, after noting significant amounts of dust tracked into Federal building lobbies by workers responding at the World Trade Center, asked EPA to have them cleaned. The lobby cleanup, announced in a September 18 press release, was done by EPA contractors using HEPA vacuum trucks already operating in the area. No other specialized cleanup was conducted on the upper floors at 290 Broadway or 26 Federal Plaza.

Now I would like to detail some of our other findings and response efforts. EPA has been testing for numerous volatile organic compounds or VOCs such as benzene--at several sites within and near the perimeter of the World Trade Center site. To protect workers, EPA takes what are called ``grab'' samples of VOCs where smoke plumes have been sighted. These samples--taken at ground level on the pile--provide a snapshot at a moment in time of worst-case exposure. The samples--taken daily--are immediately analyzed at EPA's highly sophisticated mobile laboratory set up at the perimeter of the site. The proximity allows us to relay the results directly to the New York City Fire Department.

EPA standards and guidelines are set with an ample margin of safety to protect public health. In some samples taken since September 11th, EPA testing at Ground Zero has found the presence of benzene at levels that have exceeded Federal guidelines. Taking the more protective approach, we continue to urge workers to wear their respirators.

However, EPA air samples of pollutants such as benzene taken at the perimeter of the work site find levels that are very low or non-detectable. Dioxin levels were generally below health-based guidelines. Once the fires were diminished, concentrations of several chemicals, declined in most cases to non-detectable levels, even at the work site.

DEC routinely monitors for fine particulates--those smaller than 2.5 microns--at their existing network of monitoring stations. DEC and EPA have added four additional monitoring stations in Lower Manhattan. With a few exceptions early on, fine particulates have been below the level of concern for the general public, as well as groups more sensitive to air pollutants.

We know that materials in construction dust and smoke can be irritating to the eyes, nose, throat and respiratory tract. They can cause more serious reactions in sensitive populations, such as people with respiratory problems or asthma. Again, this is one of the reasons we have recommended that workers wear respirators and impacted homes and businesses be properly cleaned. Sensitive groups have been advised by New York City DOH and the Centers for Disease Control and Prevention (CDC) to take special precautions and consult their physicians if they are experiencing symptoms.

In addition, we also tested drinking water in cooperation with New York City DEP and water quality in the Hudson and East Rivers. All samples of drinking water, which were analyzed for a wide range of contaminants, met Federal standards. Analysis of runoff following heavy rain on September 14 did show some elevated levels of dioxins, asbestos and other pollutants. Follow-up sampling found levels back to those normally found in area waters.

Almost immediately after the attacks, Governor Pataki asked

President Bush to declare a Federal disaster, activating the Federal Response Plan. The plan becomes effective when destruction from a disaster goes beyond local and State capabilities. Twenty-seven Federal agencies and the American Red Cross are activated to supplement State and city resources, with the Federal Emergency Management Agency (FEMA) in the lead. In the World Trade Center response, Federal agencies have provided funding, personnel, technical expertise, equipment and other resources at New York City's request. Acting on mission assignments generated by FEMA, EPA is the lead agency for hazardous waste disposal and has also taken primary responsibility for monitoring the ambient air, water and drinking water and coordinating the sampling data for all the response agencies. In addition, EPA was asked to manage worker and vehicle wash down operations at the site and the Fresh Kills landfill, which has been receiving debris from the disaster site.

In support of the agencies directly responsible for worker safety, EPA initially supplied the New York City Office of Emergency Management (OEM) 12,432 respirators, 37,600 dust cartridges, 13,000 pairs of safety glasses and 1000 hard hats. In addition, 1465 respirators, 2608 cartridges plus Tyvek suits, booties and hard hats were provided to the New York State Departments of Environmental Conservation and Health. The U.S. Coast Guard, at the request of FEMA, worked with EPA to assist with the response, and the New York State National Guard conveyed the equipment to the city for distribution to response workers.

On September 11th, EPA provided a flyer to FEMA for distribution at Ground Zero that emphasized the potential danger from asbestos and urged workers to wear protective gear. By September 20, EPA had set up worker wash down operations at the site, at which flyers were distributed and signs posted recommending the use of respirators and other protective gear. During daily interagency site operations meetings, EPA repeatedly emphasized the need for response workers to wear their respirators. This message was continuously reiterated at community meetings and with the press.

EPA has set up a full service, winterized wash station at which workers can vacuum off their work clothes, shower and change before going home. Signs directing workers to wear protective gear are posted. Several thousand workers pass through the wash station every day.

EPA recognizes that the collapse of towers was a cataclysmic event unlike any we have experienced. The monitoring data collected in response to this event, warrants further study. With this in mind, in October, EPA began a health risk evaluation and a comparative toxicological study. These are in addition to studies being conducted by other agencies and academic institutions.

Through our health risk evaluation, we hope to better understand the possible health risks to people who may have been exposed to various pollutants during several periods following the disaster. EPA is reviewing ambient air monitoring data gathered by EPA, OSHA, the New York State Department of Environmental Conservation and various academic and commercial entities.

The Agency is assessing possible exposures during the first days after the attack, the following several weeks and the subsequent months through early January. This evaluation focuses on the different population groups of concern--response workers and volunteers at Ground Zero, residents and workers in the immediate surrounding areas.

We expect to have a preliminary report completed this month, which we will share with your Subcommittee and the public. A more detailed evaluation, building on our initial findings, should be complete by early May, with the final report due in April 2003.

Our second investigation is a comparative toxicity analysis. The objective is to compare the toxicity of the particles released from the World Trade Center collapse to other particulate samples of high and low toxicity that have been tested on animals. In this effort, we are comparing particles collected from Ground Zero to fly ash from oil-fired power plants, dust recovered from the volcanic eruption of Mount St. Helens and urban ambient air particles.

EPA is also collaborating with New York City and State officials, with two components of the Department of Health and Human Services through the National Institute of Environmental Health Sciences and the Centers for Disease Control and Prevention, and various academic institutions on research in progress and the identification of future research needs. These efforts will help us better understand the magnitude of any effects from the World Trade Center disaster.

In addition, EPA has supported the Federal Agency for Toxic Substances and Disease Registry (ATSDR) and the New York City Department of Health in their study of residences impacted by the World Trade Center collapse. We are committed to helping residents and business employees in Lower Manhattan address their concerns about the indoor air. We will continue to work with the city agencies until people are assured that their health is protected.

Before concluding, I would like to touch on one additional topic. From the start, EPA has been committed to sharing the results of our data with the public and to helping people understand what they mean. Under incredible circumstances --having witnessed the attacks and been evacuated from our Lower Manhattan offices--EPA staff began the process of sampling, analyzing, interpreting and conveying environmental data to the first-line response agencies, the press and the public. All of the agencies use our data to assess the risks to workers and the public, and to develop approaches to address any concerns.

EPA has taken the lead in making the data available to the public through our website. Sampling results for the major pollutants of concern and daily summaries of our monitoring results are available at www.epa.gov. A complete set of laboratory results--updated daily--is available to the public at our offices at 290 Broadway in Lower Manhattan.

Response workers and the people of New York have been through much trauma and uncertainty. We hope that our findings, comprising thousands of pages of text, will help them address concerns about their health and their environment. Be assured that we will be vigilant in our ongoing efforts.

As we look to the future, we will work with our Federal, State and city partners and Congress, on science-based approaches that ensure that public health is protected.

In closing, Mr. Chairman, I would like to thank you for giving us this opportunity to share the work of the many dedicated and professional EPA employees who have worked tirelessly to protect the health of all New Yorkers in the wake of this unprecedented event.

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Responses by Jane M. Kenny to Additional Questions from Senator Smith

Question 1. Please provide the Committee with all available information regarding the location and use of monitors employed to analyze air quality in the wake of September 11, 2001 attack on New York City. Please identify monitors that were in operation prior to September 11, 2001, as well as any monitors put in place after that date. At a minimum your response should address:

(a) the precise locations and type of each of those monitors;
(b) when data samples were collected from each monitor;
(c) whether any of those monitors have been removed, and if so when;
(d) a description of the use of any non-stationary air monitors.
(e) In addition, please supply the Committee with the data taken from each monitor for, at a minimum, the period from September 11th to November 11, 2001.

Any additional information that may be useful or helpful in understanding the information requested above would be welcome.

Response. Since September 11th, EPA has taken over 15,000 samples of dust, air, drinking water, and stormwater runoff at and around the World Trade Center site. We have also sampled in Brooklyn, Queens, the Bronx and Staten Island, at the Fresh Kills Landfill and in New Jersey. The following is a description of EPA's monitoring activities:

fixed location routine air sampling and monitoring stations

EPA has collected time-weighted air samples at fixed locations in Lower Manhattan and analyzed these samples for asbestos, metals, dioxin, polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons (PAHs), silica, particulates (PM2.5, PM10) and aldehydes. EPA also collected and analyzed air quality samples for asbestos, metals and particulates from fixed locations on and at the perimeter of the Fresh Kills Landfill in Staten Island.

In addition, EPA collected and analyzed air samples for asbestos, dioxin, volatile organic compounds (VOCs), aldehydes and particulates from monitoring locations that are part of the New York State Department of Environmental Conservation (NYSDEC) air sampling network, including permanent sites and locations added after September 11th.

Air samples of asbestos were also collected and analyzed from monitoring locations in New Jersey that augmented the New Jersey Department of Environmental Protection's permanent air monitoring network.

Attachment 1 (WTC--EPA Time-Weighted Air Quality Sampling at Fixed Stations) provides sample locations, parameters, sampling frequency, sampling start date, sampling end date and the reason why the sampling location was moved or eliminated, if applicable. Attachment 2 shows exact sampling locations.

fixed location non-routine/episodic air sampling and monitoring stations

EPA conducted non-routine/episodic monitoring for isocyanates, phosgene (a possible product of Freon combustion), other gases and VOCs at fixed locations. A summary of this monitoring follows:

Isocyanates.--Isocyanate samples were collected on December 11 and 19 at locations (See Attachment 2) R, A, 3B (Church and Vesey Streets), B, C, D, P, S, E, North Tower and Vista Hotel (World Trade Center Building 3), and on February 8 and 12 at locations R, E, P, S, D, C, B, 3A (at the SW corner of Building 5, near Church and Dey Streets), A, Vista Hotel and North Tower. Isocyanate samples were analyzed by EPA contract laboratories, which provided a lower level of detection than that provided by the tape meter screening devices used for additional real-time monitoring. Real-time monitoring for isocyanates using the tape meters was performed on December 4, 6, 11 and 19 at locations R, A, 3B, B, C, D, P, S, E, North Tower, South Tower, Austin Tobin Plaza, Vista Hotel (West and Liberty Streets.) and World Trade Center Building 4.

Phosgene and other gases.--From September 19 to January 20, EPA monitored twice daily for phosgene, chlorine, sulfur dioxide, hydrogen

cyanide, hydrofluoric acid, hydrochloric acid, ammonia, explosive gases, oxygen and total VOCs at all fixed monitoring locations in Lower Manhattan to determine the presence of gross amounts of airborne contaminants. The monitoring was discontinued based on consistently negligible or non-detectable readings throughout the affected area. This monitoring was performed using hand-held, non-stationary monitoring instruments and provided real-time snapshot results.

data collection for risk evaluation studies

EPA's Office of Research and Development (ORD) has done time-weighted sample collection (24-hour samples each day) and analysis for particulates, metals and elemental and organic carbon, as well as continuous monitoring of PM concentrations at locations A and C (including alternate site C1) and K. ORD has also been collecting VOC grab samples at worker breathing levels at sites A, C and K and from outside the 16th floor at 290 Broadway (site 16). Typically, samples were collected each day at sites A, C and K and periodically at 290 Broadway (See Attachments 1 and 2).

non-fixed location air sampling and monitoring

In addition to fixed location monitoring, EPA continues to sample and monitor air quality at non-fixed locations. VOC grab samples are taken daily at various locations at Ground Zero, generally in the vicinity of the North Tower, South Tower and Austin Tobin Plaza. EPA originally analyzed these samples using the national Emergency Response Team Trace Atmospheric Gas Analyzer (TAGA) and now analyzes the samples at our Mobile Laboratory, stationed at the perimeter of the site. This allows us to provide results within four hours of sampling. The data is used to alert the Fire Department of New York (FDNY) and Ground Zero workers about conditions that pose immediate health concerns. A total of four VOC grab samples are collected daily at ground level or breathing level.

Air monitoring is also performed during activities conducted by EPA to remove hazardous materials and to recover oil from storage tanks throughout the Ground Zero excavation, particularly when those events take place within confined spaces. This monitoring is performed to ensure that air quality in the vicinity of the response workers is within permissible levels, and to determine the proper level of personal protective equipment that must be worn during these operations. Oxygen, hydrogen sulfide, carbon monoxide, explosive gases and total VOCs have been routinely measured.

EPA has also conducted air monitoring at the special request of the FDNY. On several occasions air monitoring was performed during below-grade entries in or near the main and auxiliary World Trade Center chiller plants. The standard five-gas monitor, mentioned above, was used along with a halocarbon monitor purchased specifically to detect Freon R-22 (chlordifluoromethane). This monitoring was performed as needed and three times daily during the excavation of the main chiller plant. The daily R-22 monitoring using the halocarbon meter was discontinued when a permanent R-22 monitoring system was installed by the New York City Department of Design and Construction. Freon R-22 monitoring was discontinued after the recent removal of the chiller plant.

We have provided a record of our sampling results to date (See Attachment 3).

Question 2. Please provide a precise description of the type of safety equipment that was distributed to personnel in the Ground Zero area and the date that equipment was made available, including, but not

limited to:

respiration masks made available to the workers;

when decontamination showers and procedures were implemented; and

what contractors were employed to distribute masks and operate and oversee the decontamination showers and procedures.

Response. On September 11th and in the immediate aftermath of the attacks, EPA relied on the stock of personal protective gear (respirators, cartridges, tyvek suits and other equipment) that the EPA national Environmental Response Team had on-hand in our Edison, New Jersey offices. The equipment was used by EPA response personnel, the Agency's Criminal Investigations Division and local New Jersey county responders. By September 14, EPA had placed an emergency order for additional protective gear for distribution to response workers. By September 22, EPA had distributed thousands of respirators, cartridges and other gear to New York City. EPA supplied the following personal protective equipment to the city: 22,100 air purifying respirators, 30,500 sets of P100 particulate cartridges, 14,000 pairs of safety glasses and 1,000 hard hats. In addition, 600 respirators, 2,000 cartridges plus tyvek suits, booties and hard hats were supplied to the New York State Departments of Environmental Conservation and Health. Mine Safety Appliances Company (MSA) and 3M brand respirators with GME-P100 OSHA-approved cartridges were supplied.

Initially, respirators and other protective gear purchased by EPA were delivered to the New York City Office of Emergency Management by the U.S. Coast Guard, which had been activated by EPA for the response. Some equipment was delivered directly to the city by the manufacturers. The bulk of the EPA-purchased personal protective equipment was transported from the EPA Edison facility and delivered to the Office of Emergency Management by the New York State National Guard for distribution to response workers.

On September 20, EPA began operating the first personal wash station for workers at Ground Zero at the southeast corner of the marina. Shortly thereafter, EPA posted signs at the wash station and provided flyers (Attachment 4) that instructed response workers about personal safety and health protection. On September 22, EPA began operating the first vehicle wash station on West Street near Murray Street. Over the past seven months, as many as 18 wash stations have been operating at the site. These wash stations have been operated by Clean Harbors Inc. and Miller Environmental Inc. under contract to the U.S. Coast Guard. The Coast Guard continues to provide valuable assistance to EPA and the workers at Ground Zero through contractor procurement and oversight services.

On November 24, EPA opened the central wash station at West Street near Vesey Street. It was constructed, is operating, and will eventually be dismantled under EPA's contract with Earth Tech Inc. The wash tent has provided a place at which workers can decontaminate and change their work clothes, shower, store their belongings, wash up and eat. The showers have received minimal use and are being partially dismantled.

Question 3. Please provide copies of all pamphlets, flyers or other handouts explaining air quality risks provided to the workers and the dates each item became available.

Response. On September 11th, EPA developed a flyer (Attachment 5) entitled Asbestos Hazards and Precautions, which was provided to the Federal Emergency Management Agency (FEMA) for distribution at Ground

Zero. The flyer stated that ``Cleanup workers should be protected with appropriate eye protection, air purifying respirators and personal protective clothing.'' As stated above, just after September 20, EPA also distributed information about the need to wear respirators and other protective gear at our worker wash at the site. In addition, during daily interagency meetings at the city's Emergency Operations Center, EPA repeatedly emphasized the hazardous conditions at the site and the need for response workers to wear their respirators.

EPA used every opportunity during communications with the public and the press to urge response workers at Ground Zero to wear respirators. On September 13, Administrator Whitman appeared before the media at Ground Zero to emphasize the need for workers to wear their respirators. EPA's role in providing respirators was covered in our press releases (Attachments 6, 7, 8, 9 and 10) of September 13, 14, 18, 21 and 30. On numerous occasions EPA response staff discussed with FDNY personnel the need for proper respiratory protection when working at Ground Zero. On October 5, EPA sent a letter to the New York City Department of Health (NYCDOH) highlighting our concerns about workers not wearing respirators (Attachment 11). In addition to our press releases, numerous news accounts included comments by EPA officials on the importance of respiratory protection at Ground Zero.

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Responses by Jane M. Kenny to Additional Questions from Senator Clinton

Question 1. You stated in your testimony that EPA is responsible for ``coordinating the sampling data for all the response agencies.'' Can you please tell us more about this? Is this coordinated data available to the public?

Response. In the aftermath of the World Trade Center disaster, many organizations and agencies involved in the response conducted sampling and monitoring activities to assess environmental impacts. NYCDOH initially requested that the data be forwarded to them so that it could be aggregated and made available to Federal, State and local decision-makers. Initial sampling results were discussed among the agencies during daily telephone conference calls and were shared in hard copy and electronically when possible.

On September 25, 2001, the city asked EPA to develop a database to collect and track the results of the multi-agency ambient air monitoring. On September 28, EPA finalized the World Trade Center Multi-Agency Database that houses data from thirteen Federal, State and private organizations that conducted environmental monitoring after the September 11th event. The participating organizations send their data to EPA in many formats from electronic spreadsheets to hard copy to be manually entered into the database. Some of the organizations conducted limited testing and stopped submitting results after the first week. EPA, NYSDEC and New York City Department of Environmental Protection (NYCDEP) continue to monitor and submit results daily to the database. EPA and NYSDEC have provided roughly 95 percent of the data in the database.

The World Trade Center Multi-Agency Database has been used primarily as a tool for the response agencies. Data from some of the organizations was not quality assured for accuracy in the early months and could not be publicly released. EPA began to make our monitoring results and data from NYSDEC available to the public on EPA's website in late September. All of EPA's monitoring data, with the exception of the complex analytical data ORD has collected for research, was made available in our Lower Manhattan offices at 290 Broadway (See

attachment 12). Other government organizations including the Occupational Safety and Health Administration (OSHA), NYSDEC and NYCDEP have posted their monitoring results on their respective websites.

EPA has been assured by participating government agencies that data contained in the World Trade Center Multi-Agency database has now been quality assured and will continue to be as additional data is submitted. The database, which will include data provided by government agencies, will be made available to the public on EPA's website this spring.

Question 2. How exactly does EPA relay its information to the firefighters, to the schools?

Response. Within hours of the attacks, EPA began to coordinate its response activities through FEMA. Initially, information was shared with the FDNY and other responding agencies at the city's Emergency Operations Center and the response center at P.S. 89. Currently, EPA hand-delivers our VOC data to the FDNY on a daily basis and discusses the results with the Deputy Chief in charge of health and safety. We also meet regularly with FDNY representatives to discuss sampling results and future needs. In addition, the VOC data is also delivered daily to New York City health and safety contractors at the AMEC trailer at Ground Zero. AMEC has been assigned responsibility for overall site health and safety at Ground Zero. As explained earlier, the proximity of our Mobile Laboratory to the World Trade Center site makes it possible for us to quickly relay information to the response agencies.

EPA participates in general contractor meetings twice each week and attends weekly health and safety meetings with representatives of all the on-site contractors. EPA also attends a weekly health and safety meeting that addresses site safety issues related to governmental personnel working at Ground Zero World Trade Center.

EPA has had regular communications with the New York City Board of Education (NYCBOE) regarding environmental conditions in Lower Manhattan. The NYCBOE uses our maps and data summaries at meetings with parent organizations, school representatives and local groups. Printed copies of EPA data summaries have been important communications tools for local residents who do not have access to the Internet. EPA has reported any results that exceeded Federal standards or benchmarks which have been few to the NYCBOE. We have also informed the Chair of the local community board and the president of the Stuyvesant High School Parents Association about several results that exceeded standards or benchmarks near the barge operation adjacent to the school. In addition, we have provided information to the environmental consultant for Stuyvesant High School, appeared at a Stuyvesant Parents Association meeting on air quality and fielded numerous calls from concerned parents seeking information.

Question 3. You indicated in your testimony that EPA did conduct some indoor sampling in some of the Federal buildings in Lower Manhattan. Please provide the results of that sampling.

Response. EPA took a small number of indoor air samples (Attachment 13) at 290 Broadway and 26 Federal Plaza on September 13 and at 100 Church Street on October 23. At 290 Broadway and 26 Federal Plaza, low levels of asbestos were detected in several of the samples. At 100 Church Street no samples were found to be above the minimum detection limit. The General Services Administration (GSA), our Federal landlord, also took dust and air samples in our building and at the Federal Court House at 500 Pearl Street. Asbestos was found in some of the dust

samples and low levels of asbestos were detected in some of the air samples. EPA vacuumed up the visible dust that had been tracked into Federal building lobbies by response workers before we received the monitoring results from GSA.

As detailed above, EPA's Office of Research and Development sampled periodically outside at 290 Broadway to gather data for a health risk evaluation. (See Attachment 1.)

Question 4. In your testimony, you indicated that only 15 asbestos samples exceeded the AHERA standard. Yet your website says that there were 31 exceedances, as does Carl Johnson in his testimony. Can you explain?

Response. EPA used our agency website to get information to the public as quickly as possible. By late September, we were posting asbestos results to the website almost as soon as the data was received from the lab and reviewed. Later, after consulting with experts in asbestos analysis techniques, we found we had been making an additional, unnecessary technical adjustment for the volume of air sampled, which affected the results. We ultimately stopped making this adjustment. For consistency of scientific comparisons, we then reevaluated the data we had previously posted on the EPA website and corrected the asbestos values where necessary.

This lowered the number of asbestos exceedances. Given the extremely low percentage of asbestos exceedances now 21 out of almost 8,000 in Lower Manhattan the significance of the adjustments is minor.

Question 5. Please provide information on the rate of sampling and reporting of data since September 11th. The frequency of sampling varies between sampling parameters and locations.

Response. As described in our response to Question 1 from Senator Smith above, we conducted a wide range of sampling at a variety of rates ranging from continuous daily sampling to less frequent episodic sampling. (See Attachment 1.)

In the aftermath of the disaster, information about our monitoring results and response activities was shared daily with the other Federal, State and local response agencies, summarized for the press and reported to thousands of local residents at public meetings and through our telephone hot-line. As soon as we were assured that the data was accurate, all daily summaries and laboratory reports, with the exception of the complex ORD data collected for research, were made available in our Lower Manhattan offices. Data related to the major pollutants of concern was posted on our website beginning in late September.

Question 6. As you know, EPA has been widely criticized for the statements that it made in the first few days following the attack. Please respond to this criticism, and explain what the Agency intends to do to improve its communications efforts in the future.

Response. At each stage of our response to the events of September 11th, we have based our findings on the scientific data before us. The statements made by EPA about the results of air quality monitoring in Lower Manhattan have been based on sound science. To date, the results of our comprehensive tests of the outdoor air consistently indicate that air quality in Lower Manhattan did not and does not pose an increase to significant long-term health risk to those who live, work or visit here.

Of course, as we emphasized from the start, this does not apply to

workers at Ground Zero who must wear respirators and other appropriate protective equipment, even now that the fires are out. We were aware that the dusty and smoky conditions during the months following the disaster could and did cause a range of respiratory problems, especially among sensitive groups such as people with asthma. Our advice to anyone experiencing symptoms was that they should consult a physician as soon as possible. We also emphasized that people returning to dusty homes and workplaces should have their interior spaces professionally cleaned.

We note that Dr. George Thurston of the New York University School of Medicine testified at the February 11 Senate Committee hearing that ``While our analyses are consistent with the Government's conclusion that the WTC dust is not likely to have short- or long-term serious health impacts on otherwise healthy local residents, we found that it is very irritating and capable of causing the symptoms reported by many residents.''

EPA is collaborating with our Federal, State and city partners to address ongoing concerns about indoor air quality through a multi-agency task force. The group has already made considerable progress. With EPA's guidance, NYCDEP will soon begin to remove residual debris from roofs and building facades, EPA will conduct a pilot study of indoor cleaning techniques, and all of the agencies will continue to assess the cleaning that has been conducted and develop testing criteria.

In the event of a future disaster, EPA will be better prepared to quickly communicate monitoring results to the public. We have developed a database for collecting and tracking environmental monitoring results and have identified standards and benchmarks to help us evaluate our findings. We have revised agency operations at a national level to identify opportunities for improving responses especially under terrorist attacks. Additionally we will complete a regional after-action review to identify opportunities for improvement.

Question 7. Eric Goldstein of Natural Resources Defense Council recommended that it should be examined whether there should be shorter term standards for exposure to high intensity bursts of particulate matter (i.e. shorter than a 24-hour measuring standard), and whether standards should be established for exposure to fiberglass, dioxin and other pollutants that are not currently part of the formal standard setting process. Please comment.

Response. As part of its responsibilities under the Clean Air Act, EPA periodically (every five years) conducts a review of scientific advances for criteria pollutants. EPA is currently in the middle of a comprehensive, periodic review of the most recent scientific information on health effects associated with exposure to ambient particles. This review includes a full evaluation of available information on health effects associated with exposures over a wide range of averaging times, including annual, 24-hour periods and shorter periods such as hourly. When completed, this scientific review will form the basis for EPA's decision on whether revisions to the PM standards, such as the agency's actions in establishing a new standard for PM2.5. EPA will take advice from the Agency's scientific advisory committee and public comments into account in making any decisions.

With respect to other pollutants such as dioxin and fiberglass, EPA currently has a formal, two-stage standard-setting process that addresses such pollutants. Under Section 112 of the Clean Air Act, EPA

establishes technology-based emissions standards for specific sources of the 188 listed hazardous air pollutants (including dioxin and fiberglass, as a fine mineral fiber).

Ultimately, EPA will evaluate the residual risks that would remain after such emission standards are met and sets risk-based standards, as appropriate, to protect public health.

In addition, EPA has been developing Acute Exposure Guidelines for dozens of chemicals that will establish three levels of concern from reversible to irreversible anticipated effects for exposure durations of 30 minutes, 60 minutes, 4 hours and 8 hours. The guidelines will be published following peer review by the National Academy of Sciences. These guidelines are being established on a ``worst first'' basis, addressing the chemicals widely understood to be most toxic in short, intense exposures. Dioxin and fiberglass have less acute toxicity than the chemicals for which guidelines are now being established.

Question 8. There have been reports that some trucks transporting debris from the site are uncovered and not fully wetted down. Who is responsible for monitoring this operation? What further actions can be taken to ensure that this operation is conducted in a manner that is as clean as possible?

Response. All trucks leaving the World Trade Center site are required by the city to be covered. Typically, the trucks go through a cutting station, where any overhanging metal is burned off. The drivers then either apply their own covers or the trucks are covered with rolled material, which is applied on the cutting stands. In the fall, the trucks were routinely wet down. Wetting operations were curtailed during short periods during the winter, when sub-freezing temperatures made the procedure too hazardous; wetting is not done when the debris is already sufficiently wet because of site conditions.

Various agencies have responsibility for vehicles leaving the site, including:

EPA, which operates vehicle wash down stations at World Trade Center exit points to prevent vehicles from tracking contaminants off the site;

the New York City Department of Design and Construction, which is responsible for overall site operations, including traffic routing;

NYCDOH, which also monitors trucks to ensure that they have been washed down as required under an order from the NYCDOH commissioner. It is our understanding that NYCDOH issued violations and fines for trucks that they determined were not adequately washed down or covered.

NYSDEC, which enforced traffic control at Ground Zero last fall and monitored trucks to ensure that loaded vehicles were covered. NYSDEC informed EPA that the agency issued citations for trucks that were not properly covered, in violation of State regulations.

Question 9. Why are the debris barges not being required to be covered in some fashion?

Response. It is our understanding that the city has not covered the barges because the sharp-edged exposed metal in the World Trade Center debris would destroy any covering material. Instead, the debris-laden barges are wet down to suppress the dust. EPA raised this issue with New York City officials and was informed that the mesh-like material used to cover the barges when they carted municipal waste to the Fresh Kills Landfill would not be practical under these conditions.

Question 10. What actions will be taken during the rebuilding process to reduce as much as possible the noise, dust, diesel exhaust and other forms of pollution at the site?

Response.

New York State and New York City have primary responsibility for the redevelopment of Lower Manhattan. EPA is working with the city, State and other Federal agencies on ways to mitigate emissions from diesel engines associated with the recovery and rebuilding of the World Trade Center area. The Agency is encouraging the State and city to promote and require the use of ultra low sulfur diesel fuel (ULSD) and retrofit devices for diesel powered equipment and vehicles. The use of diesel particulate filters has the potential to reduce emissions of particulates up to 95 percent and the use of ULSD can lower sulfur oxides up to 99 percent. On March 22, EPA Regional Administrator Jane Kenny recommended to FEMA that increased costs associated with using ULSD and installing retrofit devices be reimbursable.

In addition, EPA is serving on the Federal Task Force to Rebuild New York City. We have and will continue to encourage our Federal partners to apply ``green'' standards in Federal contracts and grants for World Trade Center redevelopment, to fund clean ferries, and to advocate the use of lower polluting construction equipment, cleaner burning alternative fuels and green construction practices.

An Environmental Review and Planning Subcommittee of the Federal Task Force has been established. FEMA has prepared a preliminary draft programmatic environmental assessment addressing, in a generic way, potential impacts associated with future projects. As specific projects are proposed, more detailed environmental documents will be developed to address the potential impacts and any necessary mitigation.

Question 11. There are reportedly many building roofs and terraces in and around Ground Zero that have not been cleaned since September 11th. Will EPA be providing assistance in this regard?

Response. Many building exteriors were cleaned by building owners as instructed by NYCDEP. In January and February, EPA, NYCDEP, NYSDEC and the New York State Department of Labor performed site visits at more than 400 buildings to assess exterior building cleanups conducted by building owners in the vicinity of the World Trade Center. Residual debris was observed in isolated areas at the perimeter of roofs, at the base of parapet walls and in gutters of 211 of these buildings. Debris was also visible on horizontal surfaces of building facades.

As announced in a March 25 press release (Attachment 14), NYCDEP will remove residual debris from rooftops and facades with EPA's support. OSHA will work in a coordinated effort with the city and EPA to ensure the safety and health of the workers performing this cleaning. The work is expected to begin as soon as the city completes its contracting process. This action is the result of collaboration between New York City and the Federal Government through EPA's Task Force on Indoor Air in Lower Manhattan.

Question 12. Are some of the air quality data gathered in the first two weeks after September 11th still being withheld, and if so why?

Response. EPA has made every effort to provide data to elected officials, the media or the public as soon as possible. Under circumstances of extreme difficulty, having been evacuated from our Manhattan offices, EPA staff developed a system for sampling, analyzing, interpreting and conveying environmental monitoring results

to the first-line responders, the press and the public. A website was developed to present the complex scientific data to the public in a format that was easy to navigate and understand. Copies of laboratory reports and data summaries were provided to requesting members of the public as soon as the information was validated through an expedited quality assurance process. As stated above, the Agency began to post data on our website in late September. By October 16, EPA's data, with the exception of research data collected by ORD, was made available for review in our Lower Manhattan offices. The data repository is kept up-to-date and new data is regularly posted on our website.

Question 13. Do you have adequate resources to meet response needs? Has access to resources been an obstacle to fulfilling your responsibilities in this regard?

Response. Acting on mission assignments from FEMA under the Federal Response Plan, EPA is the lead agency for hazardous substances. EPA has been given primary responsibility for monitoring the ambient air, water and drinking water and coordinating the sampling data for all of the response agencies. In addition, EPA was asked to manage worker and vehicle wash down operations at the site and at the Fresh Kills Landfill, which has been receiving debris from the disaster site. A mission assignment from FEMA confirms that FEMA will provide funding for the performance of the assigned activities.

The $94 million committed to EPA by FEMA has been sufficient to provide for the activities described above. New mission assignments, including those to address the assessment and remediation of indoor spaces, will also require FEMA funding.

Question 14. Please provide information on activities planned for protecting public health and the environment at and around Fresh Kills after current disaster-related activity ends.

Response. In September, EPA established a network of fixed air monitors at the Fresh Kills Landfill and on the perimeter of the site to protect workers who handle World Trade Center debris at the landfill and people living in nearby neighborhoods. EPA monitors for asbestos, particulate matter/dust and metals at these fixed monitoring stations. (See Attachment 1.)

New York State operates a federally approved air monitoring network that includes ambient monitoring stations on Staten Island. These monitors, which are adjacent to the Fresh Kills Landfill and in the surrounding neighborhood, measure particulate matter and hazardous air pollutants. Monitoring results are available to the public, in some cases in real-time, on the state's Web page. EPA and the State will continue to review this data to ensure that citizens are not exposed to unhealthful levels of pollutants related to disaster response activities or normal operations at the landfill. In addition, EPA will continue to provide the State with fiscal support under Section 105 of the Clean Air Act and technical support for future monitoring.

New York State is authorized to manage the Fresh Kills Landfill and we expect that the State will address post-disaster operations at the landfill.

[GRAPHICS NOT AVAILABLE IN TIFF FORMAT]

[Senate Hearing 107-524, Part II]
[From the U.S. Government Printing Office]

S. Hrg. 107-524, Part II

AIR QUALITY IN NEW YORK CITY AFTER THE SEPTEMBER 11, 2001 ATTACKS

FIELD HEARING

BEFORE THE

SUBCOMMITTEE ON CLEAN AIR, WETLANDS, AND CLIMATE CHANGE

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ONE HUNDRED SEVENTH CONGRESS

SECOND SESSION

ON

AIR QUALITY IN NEW YORK CITY AFTER THE SEPTEMBER 11, 2001 ATTACKS

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FEBRUARY 11, 2002--NEW YORK CITY

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C O N T E N T S

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FEBRUARY 11, 2002--NEW YORK CITY
ADDITIONAL MATERIAL--Continued

[GRAPHICS NOT AVAILABLE IN TIFF FORMAT]

ATTACHMENT 4

Environmental Protection Agency

EPA Personal Safety & Health Protection Recommendations for Search and Rescue Personnel

personal protection equipment (ppe)

All personnel in the work area should wear the following:

Hard hats.

Steel-toed/heavy duty work shoes.

Long pants and long sleeve work shirts.

Safety glasses/eye protection.

Respiratory protection.

Ground zero: Approved respirator (P-100 or equivalent).
Other areas: Dust mask (N-100/R-100 or equivalent).

work area safety concerns

Watch surroundings at all times.
Be alert for materials and debris that may fall from damaged buildings.
Cap and secure unused pressurized cylinders.
As far as practical, try to keep the generation of dusts to a minimum.
Use the buddy system.

work area health concerns

Clean respirators and eye wear as frequently as possible.
No consumption of foods that have not been covered or properly sealed.
When leaving work area:

Dust off clothing.
Clean or scrape off shoes.
Wash hands and face.

heavy equipment operations

Stand clear of operating equipment and vehicles.
Avoid entering crane swing radius.
Use tag lines when lifting loads.
Use spotter during lifting operations and for personnel safety in area (no lifting over personnel/equipment).
All equipment operators wear proper PPE when leaving equipment (see above).
Be cautious of operating speeds in work areas and especially when leaving the area.
Recommend speeds no faster than 10 mph until outside hazard areas.

emergency signals

Immediately Stop Work/Evaluate Area: Three (3) repeated short blasts of siren/air horn.
Stop Work/Remain Silent: One (1) long blast of siren/air horn.
Restart Work: One (1) long and two (2) short blasts of siren/air horns.

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ATTACHMENT 5

Asbestos Hazards and Precautions

In response to the World Trade Center devastation, concerns have been raised with breathing asbestos-contaminated material and irritation from skin and eye contact. Asbestos was likely used in various construction materials used to build the World Trade Center. Short-term exposure to asbestos can cause respiratory, skin, or eye irritation. These symptoms can also be experienced from contact with non-asbestos dust, such as a concrete particulate debris.

For the public the best response is to remain indoors with windows shut if possible. For emergency workers air purifying respirators should be used when available but paper filament masks will provide sufficient protection under minimal exposure conditions.

Cleanup workers should be protected with appropriate eye protection, air purifying respirators and personal protective clothing, such as TYVEKs, to prevent skin irritation. Workers should practice

basic decontamination procedures, such as washing hands and faces. To minimize air-borne contamination, debris should be misted or sprayed with water during cleanup operations.

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ATTACHMENT 6

EPA Press Release: EPA Response to September 11

September 13, 2001

epa initiates emergency response activities, reassures public about environmental hazards

U.S. Environmental Protection Agency Administrator Christie Whitman today announced that EPA is taking steps to ensure the safety of rescue workers and the public at the World Trade Center and the Pentagon disaster sites, and to protect the environment. EPA is working with State, Federal, and local agencies to monitor and respond to potential environmental hazards and minimize any environmental effects of the disasters and their aftermath.

At the request of the New York City Department of Health, EPA and the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) have been on the scene at the World Trade Center monitoring exposure to potentially contaminated dust and debris. Monitoring and sampling conducted on Tuesday and Wednesday have been very reassuring about potential exposure of rescue crews and the public to environmental contaminants.

EPA's primary concern is to ensure that rescue workers and the public are not exposed to elevated levels of asbestos, acidic gases or other contaminants from the debris. Sampling of ambient air quality found either no asbestos or very low levels of asbestos. Sampling of bulk materials and dust found generally low levels of asbestos.

The levels of lead, asbestos and volatile organic compounds in air samples taken on Tuesday in Brooklyn, downwind from the World Trade Center site, were not detectable or not of concern.

Additional sampling of both ambient air quality and dust particles was conducted Wednesday night in Lower Manhattan and Brooklyn, and results were uniformly acceptable.

``EPA is greatly relieved to have learned that there appears to be no significant levels of asbestos dust in the air in New York City,'' said Administrator Whitman. ``We are working closely with rescue crews to ensure that all appropriate precautions are taken. We will continue to monitor closely.''

Public health concerns about asbestos contamination are primarily related to long-term exposure. Short-term, low-level exposure of the type that might have been produced by the collapse of the World Trade Center buildings is unlikely to cause significant health effects. EPA and OSHA will work closely with rescue and cleanup crews to minimize their potential exposure, but the general public should be very reassured by initial sampling.

EPA and OSHA will continue to monitor and sample for asbestos, and will work with the appropriate officials to ensure that rescue workers, cleanup crews and the general public are properly informed about appropriate steps that should be taken to ensure proper handling, transportation and disposal of potentially contaminated debris or materials.

EPA is taking steps to ensure that response units implement appropriate engineering controls to minimize environmental hazards, such as water sprays and rinsing to prevent or minimize potential exposure and limit releases of potential contaminants beyond the debris site.

EPA is also conducting downwind sampling for potential chemical and asbestos releases from the World Trade Center debris site. In addition, EPA has deployed Federal On-Scene Coordinators to the Washington, DC Emergency Operations Center, Fort Meade, and FEMA's alternate Regional Operations Center in Pennsylvania, and has deployed an On-Scene Coordinator to the Virginia Emergency Operations Center.

Under its response authority, EPA will use all available resources and staff experts to facilitate a safe emergency response and cleanup.

EPA will work with other involved agencies as needed to:

procure and distribute respiratory and eye protection equipment in cooperation with the Department of Health and Human Services;

provide health and safety training upon request;

design and implement a site monitoring plan;

provide technical assistance for site control and decontamination; and

provide some 3000 asbestos respirators, 60 self-contained breathing apparatuses and 10,000 protective clothing suits to the two disaster sites.

New York Governor George E. Pataki has promised to provide emergency electric generators to New York City in efforts to restore lost power caused by Tuesday's tragedy, and EPA will work with State authorities to expedite any necessary permits for those generators.

OSHA is also working with Consolidated Edison regarding safety standards for employees who are digging trenches because of leaking gas lines underground. OSHA has advised Con Edison to provide its employees with appropriate respirators so they can proceed with emergency work, shutting off gas leaks in the city.

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ATTACHMENT 7

EPA Press Release: EPA Response to September 11

September 14, 2001

epa emergency responses at world trade center and pentagon

After terrorists struck the World Trade Center and the Pentagon on September 11, 2001, 26 EPA specialists were on the scene within hours. Currently, more than 225 EPA experts are responding to the WTC and Pentagon disasters. EPA criminal investigators, forensic and technical specialists and emergency response experts are providing support to FEMA, the FBI and local emergency officials. EPA is one of many Federal agencies responsible for responding to this national crisis.

The primary mission of EPA's Emergency Response Program is to protect the public and the environment from immediate threats posed by the release or discharge of hazardous substances and oil. Emergency response personnel are monitoring potential air quality issues; analyzing samples for asbestos and other hazardous materials and oil sampling; and disposing of biomedical waste. EPA has worked with the State of New York and Virginia to waive landfill amount requirements to expedite the removal of debris from the scenes.

EPA has initially budgeted $600,000 to provide technical assistance and response support. More than 3,000 respirators, 60 self-contained breathing apparatus machines, and 10,000 specially-equipped protective suits are on the way to these disaster sites. EPA is working closely with Federal, State, and local partners to ensure that all workers and volunteers involved in the rescue and cleanup efforts are properly protected.

EPA Region 2 emergency response staff are also stationed at the FBI Joint Operations Center in New York City, Trenton, New Jersey Emergency

Operations Center, and FEMA's office in Albany, NY. Region 2's Edison, NJ office is also providing work space for 100 FEMA employees. EPA HQ Emergency Operations Center is operating on a 24-hour basis, while R3 has emergency responders deployed to Washington, DC., Ft. Meade and at the Willow Grove Naval Air Station in Pennsylvania.

EPA will continue to coordinate with our Federal partners to ensure the health and safety of the public and the environment during this national crisis.

More information is available at: EPA's Environmental Response Team Center, EPA's Oil Spill Program, and EPA's Superfund Program.

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ATTACHMENT 8

EPA Press Release: EPA Response to September 11

September 18, 2001

whitman details ongoing agency efforts to monitor disaster sites, contribute to cleanup efforts

EPA Administrator Christie Whitman announced today that results from the Agency's air and drinking water monitoring near the World Trade Center and Pentagon disaster sites indicate that these vital resources are safe. Whitman also announced that EPA has been given up to $83 million from the Federal Emergency Management Agency (FEMA) to support EPA's involvement in cleanup activities and ongoing monitoring of environmental conditions in both the New York City and Washington metropolitan areas following last week's terrorist attacks on the World Trade Center and the Pentagon.

``We are very encouraged that the results from our monitoring of air quality and drinking water conditions in both New York and near the Pentagon show that the public in these areas is not being exposed to excessive levels of asbestos or other harmful substances,'' Whitman said. ``Given the scope of the tragedy from last week, I am glad to reassure the people of New York and Washington, DC that their air is safe to breath and their water is safe to drink,'' she added.

In the aftermath of last Tuesday's attacks, EPA has worked closely with State, Federal and local authorities to provide expertise on cleanup methods for hazardous materials, as well as to detect whether any contaminants are found in ambient air quality monitoring, sampling of drinking water sources and sampling of runoff near the disaster sites.

At the request of FEMA, EPA has been involved in the cleanup and site monitoring efforts, working closely with the U.S. Coast Guard, the Centers for Disease Control (CDC), the Occupational Safety and Health Administration (OSHA) and State and local organizations.

EPA has conducted repeated monitoring of ambient air at the site of the World Trade Center and in the general Wall Street district of Manhattan, as well as in Brooklyn. The Agency is planning to perform air monitoring in the surrounding New York metropolitan area. EPA has established 10 continuous (stationary) air monitoring stations near the WTC site. Thus far, from 50 air samples taken, the vast majority of results are either non-detectable or below established levels of concern for asbestos, lead and volatile organic compounds. The highest levels of asbestos have been detected within one-half block of Ground Zero, where rescuers have been provided with appropriate protective equipment.

In Lower Manhattan, the City of New York has also been involved in efforts to clean anything coated with debris dust resulting from Tuesday's destruction. This involves spraying water over buildings, streets and sidewalks to wash the accumulated dust off the building and

eliminate the possibility that materials would become airborne. To complement this clean-up effort, EPA has performed 62 dust sample analyses for the presence of asbestos and other substances. Most dust samples fall below EPA's definition of ``asbestos containing material'' (one percent asbestos). Where samples have shown greater than 1 percent asbestos, EPA has operated its 10 High Efficiency Particulate Arresting, HEPA, vacuum trucks to clean the area and then resample. EPA also used the 10 HEPA vac trucks to clean streets and sidewalks in the Financial District in preparation for Monday's return to business. The Agency plans to use HEPA vac trucks to clean the lobbies of the five Federal buildings near the World Trade Center site, and to clean the streets outside of New York's City Hall.

Drinking water in Manhattan was tested at 13 sampling points, in addition to one test at the Newtown Sewage Treatment plant and pump station. Initial results of this drinking water sampling show that levels of asbestos are well below EPA's levels of concern.

While FEMA has provided EPA with a Total Project Ceiling cost of slightly more than $83 million for the Agency's cleanup efforts in New York City and in at the Pentagon site, EPA currently is working with emergency funding of $23.7 million. If costs exceed this level, FEMA will authorize EPA to tap additional funding in increments of $15 million. As part of the additional funding to be provided by FEMA, EPA will be responsible for any hazardous waste disposal, general site safety and providing sanitation facilities for many of the search and rescue workers to wash the dust off following their shifts. EPA is coordinating with both the U.S. Air Force Center for Environmental Excellence and the U.S. Coast Guard to quickly implement these additional responsibilities to ensure that search and rescue personnel are provided with the maximum support and protection from hazardous materials that may be found during their mission.

At the Pentagon explosion site in Arlington, VA, EPA has also been involved in a variety of monitoring of air and water quality. All ambient air monitoring results, both close to the crash site and in the general vicinity, have shown either no detection of asbestos or levels that fall well below the Agency's level of concern. Testing of runoff water from the disaster site does not show elevated levels of contaminants. Given the large numbers of Department of Defense (DOD) employees returning to work this week, EPA has worked closely with officials from DOD and from the Occupational Safety and Health Administration (OSHA) to evaluate air and drinking water quality and to be certain that the workplace environment will be safe.

While careful not to impede the search, rescue and cleanup efforts at either the World Trade Center or the Pentagon disaster sites, EPA's primary concern has been to ensure that rescue workers and the public are not being exposed to elevated levels of potentially hazardous contaminants in the dust and debris, especially where practical solutions are available to reduce exposure. EPA has assisted efforts to provide dust masks to rescue workers to minimize inhalation of dust. EPA also recommends that the blast site debris continue to be kept wet, which helps to significantly reduce the amount of airborne dust which can aggravate respiratory ailments such as asthma. On-site facilities are being made available for rescue workers to clean themselves, change their clothing and to have dust-laden clothes cleaned separately from normal household wash.

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ATTACHMENT 9

EPA Press Release: EPA Response to September 11

September 21, 2001

nyc monitoring efforts continue to show safe drinking water & air

EPA Administrator Christie Whitman announced today that the most detailed results to date of ongoing monitoring of drinking water in New York City provide additional reassurance that city residents are not being exposed to dangerous contaminants including asbestos, radiation, mercury and other metals, pesticides, PCBs and bacteria.

``As we continue to monitor drinking water in and around New York City, and as EPA gets more comprehensive analysis of this monitoring data, I am relieved to be able to reassure New York and New Jersey residents that a host of potential contaminants are either not detectable or are below the Agency's concern levels,'' Whitman said. ``Results we have just received on drinking water quality show that not only is asbestos not detectable, but also we can not detect any bacterial contamination, PCBs or pesticides,'' she continued.

Whitman confirmed that EPA personnel, working in coordination with the New York City Department of Environmental Protection at and around the World Trade Center disaster site, have thus far taken a total of 13 drinking water samples from water mains in Lower Manhattan. In addition to analyzing the samples for asbestos, pesticides and PCBs (polychlorinated biphenyls, which are mixtures of synthetic organic chemicals), EPA has also tested drinking water for metals (including mercury), and radioactivity (both alpha and beta). None of these contaminants exceeded EPA drinking water standards.

``In addition to carefully evaluating drinking water in the New York area, EPA has taken samples at the Newtown Creek Wastewater Treatment Plant, where runoff from Lower Manhattan goes for treatment, to identify what sort of materials are leaving the disaster site,'' Whitman continued. ``While we haven't yet gotten results for all possible contaminants, we do know that levels of metals and mercury are below permit discharge limits,'' she noted. However, Whitman did state that ``following one rainstorm with particularly high runoff, we did have one isolated detection of slightly elevated levels of PCBs. This is something that we are continuing to monitor very closely.'' Other analysis of monitoring data taken at Newtown Creek treatment plant shows that total suspended solids and biochemical oxygen demand, common indicators of how well a wastewater treatment plant is operating, indicate that the plant is working within permit limits. The Agency will continue to collect water samples at storm water discharge points when it rains and to fully analyze the samples for asbestos, PCBs, metals and total suspended solids.

Whitman elaborated on the repeated monitoring of ambient air both at the World Trade Center disaster site and the surrounding area. To date the Agency has taken 97 air samples from 11 separate fixed monitoring sites in and around the ``hot zone'' and elsewhere in Lower Manhattan, and four fixed monitoring sites located in New Jersey downwind from the blast. Only seven samples taken at or near Ground Zero have had marginally higher levels of asbestos that exceed EPA's level of concern. All rescue workers in this restricted-access area are being provided with appropriate safety equipment. Ambient air monitoring in the Financial District, where this week people have returned to work, show levels of asbestos that are below Agency levels of concern. Four samples taken specifically to identify if mercury is present resulted in non-detectable readings. On September 19, EPA also took readings of outdoor air at numerous locations around Ground Zero for chemicals including hydrogen sulfide, volatile organic compounds (VOCs), carbon monoxide and sulfur dioxide. All readings indicated that

levels were normal and posed no public health concern. All air samples taken in New Jersey have shown no detectable levels of asbestos whatsoever.

EPA has set up eight air monitors at the Fresh Kills Landfill on Staten Island, where debris from the collapsed World Trade Center towers is being sent for criminal and forensic analysis, and eventual disposal. Initial results show no detectable levels of asbestos. The Agency will continue to operate these air monitors at the landfill and will test for asbestos and for particulate matter.

Whitman detailed dust sampling undertaken thus far at the World Trade Center site, and confirmed that EPA has done a total of 101 dust samples, of which 37 were slightly over the 1 percent asbestos (the amount above which material is considered asbestos-containing). EPA has continued to use its 10 High Efficiency Particulate Arresting (HEPA) filter vacuum trucks, especially in areas where dust samples show any elevated levels of asbestos. Of the 16 samples taken in the Battery Park City area, a residential community within two blocks of the disaster site, 12 showed slightly elevated levels of asbestos. After using the HEPA Vac trucks to clean streets and surfaces in Battery Park City, repeat sampling in the area showed asbestos levels that fall below concern amounts. EPA will continue to monitor this area. The HEPA Vac trucks were also used to vacuum lobbies of Federal buildings near the disaster site prior to having workers return.

Monitoring and cleanup efforts also continue at the Pentagon crash site. To date, EPA has taken 140 total samples, including ambient air samples, bulk debris analysis, silica and water discharge samples. Monitoring samples have been analyzed for asbestos and other hazardous materials.

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ATTACHMENT 10

EPA Response to September 11

EPA and OSHA Web Sites Provide Environmental Monitoring Data From World Trade Center and Surrounding Areas

data confirms no significant public health risks; rescue crews and nearby residents should take appropriate precautions data through september 30, 2001

U.S. Environmental Protection Agency (EPA) Administrator Christie Whitman and U.S. Department of Labor Assistant Secretary for Occupational Safety and Health (OSHA) John Henshaw announced today that both Federal agencies are providing the public with extensive additional environmental monitoring data from the World Trade Center site and nearby areas in Manhattan, Brooklyn and New Jersey. Both agencies have taken hundreds of samples to monitor environmental conditions since September 11th, and have found no evidence of any significant public health hazard to residents, visitors or workers beyond the immediate World Trade Center area.

In response to public requests for more detailed information, EPA and OSHA are making the results of environmental and occupational sampling available on their sites on the World Wide Web (www.epa.gov and www.osha.gov), and will post additional data as it becomes available.

EPA and OSHA, working closely with other Federal, state, and local agencies, have been sampling the air, dust, water, river sediments and drinking water and analyzing them for the presence of pollutants such as asbestos, radiation, mercury and other metals, pesticides, PCBs, or bacteria that might create health hazards. They have found no evidence of any significant public health hazard to residents or visitors to the

New York metropolitan area.

``EPA's website now has more detailed information on environmental monitoring information in New York City that should be very reassuring to residents, tourists and workers, and we will continue to update that site with information as it becomes available'' said EPA Administrator Whitman. ``Our data show that contaminant levels are low or nonexistent, and are generally confined to the Trade Center site. There is no need for concern among the general public, but residents and business owners should follow recommended procedures for cleaning up homes and businesses if dust has entered.''

OSHA Administrator John Henshaw confirmed that workers on the site should take appropriate steps to protect themselves, but there is no threat to public health. ``We have more than 200 staffers involved in a round-the-clock effort, continually monitoring conditions to ensure the safety and health of workers,'' Administrator Henshaw said. ``It is important for workers involved in the recovery and clean up to wear protective equipment as potential hazards and conditions are constantly changing at the site; however, our samples indicate there is no evidence of significant levels of airborne asbestos or other contaminants beyond the disaster site itself.''

On the whole, despite questions about potential contaminants from the Trade Center site, EPA and OSHA data indicates there is no cause for general public concern. Residents and workers returning to buildings where dust from the Trade Center has entered the building should follow proper procedures in cleaning buildings, but the general public should feel very reassured about the extensive environmental monitoring data that has been collected and analyzed. Rescue and recovery crews working on the Trade Center site should take steps to protect themselves from potential exposure to contaminants by using respirators and washing stations as recommended by EPA and OSHA.

In total, EPA and OSHA have taken 835 ambient air samples in the New York City metropolitan area. EPA is currently collecting data from 16 fixed air monitors at Ground Zero and in the residential and business districts around the site, and both EPA and OSHA are using portable sampling equipment to collect data from a range of locations throughout the area.

Out of a total of 442 air samples EPA has taken at Ground Zero and in the immediate area, only 27 had levels of asbestos above the standard EPA uses to determine if children can re-enter a school after asbestos has been removed a stringent standard based upon assumptions of long-term exposure. OSHA has analyzed 67 air samples from the same area, and all were below the OSHA workplace standard for asbestos.

All 54 air samples from EPA's four monitors in New Jersey found no levels above EPA's standard. Another 162 samples were taken from EPA's monitors at the Fresh Kills landfill in Staten Island, where debris from the World Trade Center is being taken; only two exceeded EPA's standard.

Of 177 bulk dust and debris samples collected by EPA and OSHA and analyzed for asbestos, 48 had levels over 1 percent, the level EPA and OSHA use to define asbestos-containing material. Although early samples from water runoff into the Hudson and East Rivers showed some elevated levels of polychlorinated biphenyls (PCBs), dioxin, asbestos and metals, recent results find non-detectable levels of asbestos, and PCBs and polycyclic aromatic hydrocarbons (PAHs) and metals below the level of concern.

EPA and OSHA have also conducted sampling for the presence of metals (lead, iron oxide, zinc oxide, copper and beryllium) at Ground

Zero and in surrounding areas. None of the levels of these metals have exceeded OSHA limits.

Although EPA has measured dioxin levels in and around the World Trade Center site that were at or above EPA's level for taking action, the risk from dioxin is based on long-term exposure. EPA and OSHA expect levels to diminish as soon as the remaining fires on the site are extinguished.

Of the 36 samples of volatile organic compounds (VOCs) taken around Ground Zero to assist response workers in determining the appropriate level of respiratory protection, several samples have been above the OSHA standard for workers. None presented an immediate risk to workers, and the levels are expected to decline when the fires are out.

Fact sheets with more specific information for various parts of the New York City metropolitan area are available:

Environmental Information from Ground Zero at the World Trade Center Site.

Environmental Information from Lower Manhattan for Residents, Area.

Employees and Local Business Owners.

Other Environmental Issues Related to the Attack on the World Trade Center.

latest available daily environmental monitoring summary

Resources on the World Wide Web:

U.S. Department of Labor's Occupational Safety and Health Administration.

New York City Department of Health.

U.S. Department of Health and Human Services.

ATTACHMENT 11

U.S. Environmental Protection Agency, Region 2,
Edison, NY, October 5, 2001.

Mr. Kelly R. McKinney, Associate Commissioner,
Bureau of Regulatory and Environmental Health Services,
New York, NY.

Dear Mr. McKinney: Health and safety concerns for workers as the World Trade Center Disaster Site (WTC) has been a concern from the beginning of the response. In addition to standard construction/ demolition site safety concerns, this Site also poses threats to workers related to potential exposure to hazardous substances. Sources of hazardous substances include (1) building materials from the destroyed buildings (primarily asbestos), (2) hazardous materials that were stored in the buildings (refrigerants, hazardous wastes, ethylene glycol, compressed gas cylinders, etc.), and (3) products of combustion being emitted from the fires that continue to burn within the debris piles. EPA, along with a number of other Federal, State and your agency, has been gathering information about these threats to worker health. Air sampling by EPA and others indicates that asbestos and other contaminants are present in the air at the WTC. EPA has recommended, and continues to recommend, that workers at the Site were respiratory protection.

In addition, EPA has recommended, and continues to recommend, that workers utilize personal protective equipment and the personnel wash stations to prevent the spread of asbestos and other hazardous substances from the WTC to their homes, cars, public transportation, food service, locations, etc. We have observed very inconsistent compliance with our recommendations, however, we do not have authority to enforce the worker health and safety policies for non-EPA/USCG employees. Therefore, EPA believes the Incident Commander should adopt

and enforce a site-wide Health and Safety Plan. If there is anything I can do to assist you concerning this matter, please feel free to call me at (732) 321-6656.

Sincerely yours,

Bruce Sprague, Chief,
Response and Prevention Branch.

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ATTACHMENT 12
U.S. EPA Region 2
NEWS

EPA Environmental Monitoring Data Related to the World Trade Center Disaster Response Available to Public

epa invites public to new information repository in lower manhattan

FOR IMMEDIATE RELEASE: Tuesday, October 30, 2001

(#01132) NEW YORK, NY--The U.S. Environmental Protection Agency has established an information repository containing environmental monitoring data gathered in response to the World Trade Center disaster. The information is available at the EPA library located at 290 Broadway in Lower Manhattan, which is the location of the agency's regional offices.

EPA began its environmental monitoring work on September 11th, shortly after the terrorist attacks occurred. Since then, the Agency has done extensive sampling and analysis of air quality and dust throughout Lower Manhattan and other potentially impacted areas, including Brooklyn, Staten Island and northern New Jersey. EPA also gathered data on drinking water and river water and sediments. All of this data is updated Monday through Friday and is available at EPA's regional library located on the 16th Floor at 290 Broadway in Lower Manhattan. The library is open to the public Monday through Thursday from 9 a.m. to 4:30 p.m. and on Friday from 9 a.m. to 1 p.m.

``We continue to closely monitor air quality and other environmental conditions in and around Ground Zero,'' said William J. Muszynski, EPA Acting Regional Administrator. ``While we have fortunately not found levels of contaminants that pose a significant health risk to the general public, our efforts to monitor the area and keep the public informed of our findings have not waned. We welcome all concerned members of the public to our Lower Manhattan offices to review the information we've gathered and to visit our Web site.''

Much of EPA's monitoring data, including data maps and general environmental summaries, is available at EPA's Web site at www.epa.gov.

[GRAPHIC NOT AVAILABLE IN TIFF FORMAT]

ATTACHMENT 14
U.S. Environmental Protection Agency, Region 2
News

FOR RELEASE: Monday, March 25, 2002

federal, state and city agencies announce actions for lower manhattan air quality

(#02114) New York, NY.--Today the Environmental Protection Agency (EPA), along with New York City and other Federal and State agencies, announced additional actions to address outdoor and indoor air quality. As part of the overall effort to continue to protect air quality, DEP will remove residual debris from rooftops and facades with EPA's guidance. OSHA will work in a coordinated effort with the City and EPA to ensure the safety and health of the workers performing this

cleaning.

EPA and New York City will expand the program to remove residual debris from rooftops and facades around the World Trade Center site. In addition, agencies will work to build on an indoor air study conducted in November and December. These actions are a result of the collaborative efforts of the EPA Administrator Christie Whitman's Task Force on Indoor Air and New York City Mayor Michael Bloomberg's Lower Manhattan Air Quality Task Force.

``Actions speak louder than words, and these actions will help increase confidence about outdoor and indoor air quality,'' said Jane Kenny, EPA Regional Administrator. ``We have been working hand-in-hand with the city to resolve the public's health concerns.''

``I am extremely pleased that EPA continues to work with the City to address concerns regarding air quality in Lower Manhattan,'' said incoming DEP Commissioner Christopher Ward.

Tests conducted since September 11th have indicated that there is no evidence of significant long-term health risks to residents and office workers from the air quality in Lower Manhattan. Inspectors from the City and EPA have surveyed area rooftops and facades identifying buildings where residual debris remains. As removal of debris from the World Trade Center site nears completion, city, State and Federal agencies are committed to continuing to protect and improve the downtown environment.

City, State and Federal health and environmental agencies are working collaboratively to continue to assess the cleaning that was conducted and determine testing criteria. Building on earlier tests, EPA will conduct field work to assess cleanup techniques and provide information for ongoing cleaning. The Agency for Toxic Substances and Disease Registry, with support from the New York City Department of Health and EPA, is planning to expand the indoor air study conducted in December 2001.

As these projects are developed, the Federal Emergency Management Agency (FEMA) will fund components that are eligible under its programs. As the agency responsible for coordinating Federal assistance in support of the city's long-term recovery efforts, FEMA is working closely with all concerned agencies.

Both the EPA and New York City Task Forces will work cooperatively to continue to protect air quality. The Lower Manhattan Air Quality Hotline (212-221-8635) will continue to be the principal point of information dissemination to businesses, residents and visitors regarding air quality and environmental issues in and around the World Trade Center site. The City's Task Force will also coordinate additional community outreach and local initiatives as part of the broader effort to build public confidence in the downtown environment.

For more information, call the City's Lower Manhattan Air Quality Hotline at 212-221-8635 between 11 a.m. and 7 p.m. Monday through Friday. In addition, information can be found on: EPA's Web site at: www.epa.gov; OSHA's Web site at: www.osha.gov; NYC DOH's Web site at: www.ci.nyc.ny.us/html/doh/home.htm; and NYCDEDP's Web site at: www.nyc.gov/html/dep/html/airmonit.html.

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