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THE AIR QUALITY

Contaminants Below Levels For Long-Term Concerns

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with ANDREW C. REVKIN

The quality of the air has become a matter of widespread anxiety among people who live or work in Lower Manhattan — anxiety compounded in many cases by open disbelief in assurances from government and public health officials that the air, while acrid and sometimes smelly, is generally safe to breathe.

Local residents and workers in downtown buildings say they fear that burning eyes, runny noses and scratchy throats — common maladies below 14th Street, especially at night — could be an indicator of something worse that is not being measured at all. For many people, the plume of dust and smoke that continues to be a presence downtown has become part of the nightmare itself: in an altered New York, even the air, it seems, is no longer what it was.

But independent testing by a company hired by The New York Times has concluded that the outdoor street level air in the vicinity of the trade center site does not contain poisons or toxic substances, especially lead and asbestos, in levels sufficient to raise long-term public health concern. The results, according to the report by Adelaide Associates of Brewster, N.Y., essentially mirrored the findings that have been reached and widely reported by the federal Environmental Protection Agency.

"Adelaide's conclusions support the E.P.A. and New York City claims that there are no significant health risks," the report said.

Adelaide sampled air for asbestos and lead and fine particle dust and found that, in all three categories, levels were below the federal government's health standards. One of the company's four monitoring stations, at the corner of Rector and Greenwich, exceeded the E.P.A.'s safety standard for asbestos, but was below the standards set by the Occupational Safety and Health Administration. Air testing, how it works and what it reveals or does not, has become part of the uneasy fabric of life in the areas around the disaster site. And health experts stress that the risks to workers directly at the ground zero cleanup site are genuine. Respiratory protection for cleanup crews, physicians say, remains essential. Volatile organic compounds like benzene, for example, have been measured directly in the smoke plume itself, but disperse so quickly into the environment that sensors a block or two away show no measurement at all.

But the experts also say that the raging, often emotional debate about air issues downtown, many of them revolving around the question of asbestos, have left many residents deeply misinformed about the relative risks of exposure that they do face every day. And government tests that turn up negative do not seem to explain everything, either. Why, for example, does the air these days make a person's throat feel so raw and ragged?

Health experts say there are also many unknowns about the exact mixture of elements that people were exposed to in the early days after the attacks, when the smoke and dust were at their worst. Some predict that there could be more cases of asthma in the city over time, though most say that one-time exposures, even if severe, are generally shrugged off by the body. Different ways of measuring asbestos have also raised concerns that the government tests do not pick up supersmall particles of asbestos fibers that might be dangerous.

But the results obtained by The Times, and interviews with independent health experts around the country and at the E.P.A., also suggest strongly that emotion and anxiety have elevated concerns about the air far beyond the levels shared by most scientists and public health experts.

"There's little risk to the general public of any ongoing air pollution related to the World Trade Center," said Patrick L. Kinney, an associate professor of environmental health sciences at Columbia University, who has monitored air testing results and was briefed about Adelaide's findings.

Professor Kinney and other experts say that the raw throats and sinuses that many residents and workers complain about are in fact mostly evidence of the body's defensive systems. Large particles of dust that get trapped in nasal and throat passages trigger irritation, but that also means that most of the particles are not making it all the way to the lungs.

Smaller particles, called respirable dust, which can penetrate deeply into the lungs and are a greater health concern, were not found in significant quantities at street level

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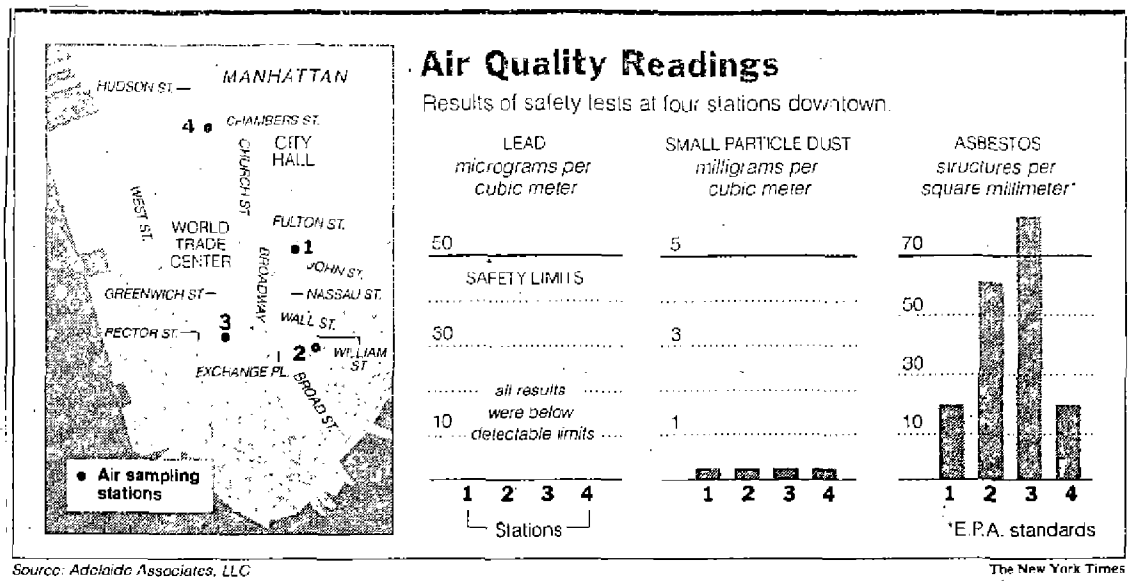

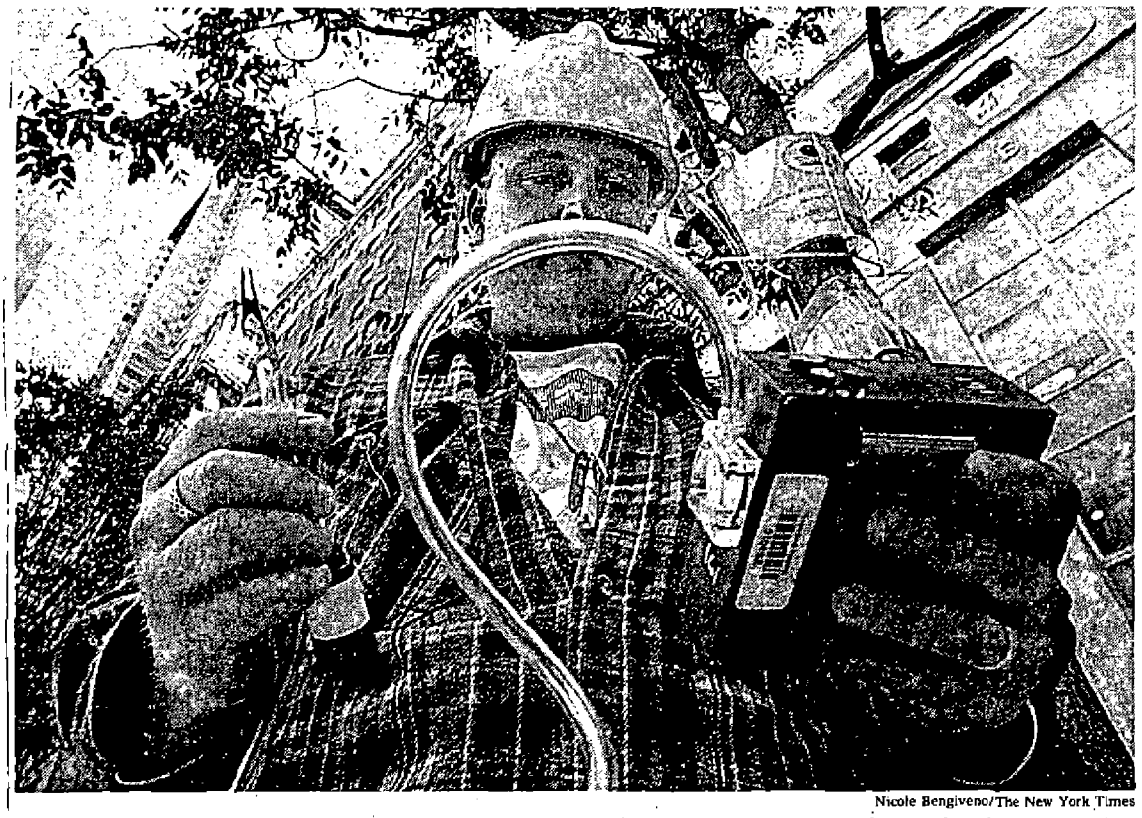

Nicole Bengivenc/The New York Times

An environmental scientist removing an air quality sample from an Environmental Protection Agency station near Pine and William Streets. Downtown residents are worried about what they may be breathing.

by Adelaide, which also confirms recent government tests.

Other concerns have been raised about supersmall particles of asbestos. Recent news reports have suggested, for example, that the smallest asbestos fibers, smashed into tiny pieces by the cataclysm when the twin towers collapsed, could be more dangerous than the 0.5 micron-and-larger size that are measured by the E.P.A. and most testing organizations, including Adelaide.

Scientists say that there is genuine debate on that point, but that by an overwhelming number, studies on asbestos exposure have found the larger particles to be far more dangerous because they tend to embed themselves in lung issue. Smaller fibers, though they can penetrate more deeply into lungs, can also be more readily attacked and removed by the body's internal defenses, most studies say.

Other impressions by residents do have a basis in science, environmental experts said. For example, there appears to be a tendency for the smell and air quality to worsen at night, and this is consistent with the way air circulates in the city, said Dr. George D. Thurston, an associate professor of environmental medicine at the New York University School of Medicine, who is involved in a study analyzing the constituents in dust and soot.

He said winds that tend to sweep pollution away during the day generally ebb at night. He also said that as pavement and buildings cool at night there are fewer updrafts of warm air that stir the atmosphere and blend clear air from higher elevations with dirtier air near the streets.

The result, he said, is that the faint persistent plume of emissions from the attack site "is sort of prowling the city overnight, meandering. And that's what they're smelling."

He, too, agreed with the authorities that there was no sign of a clear health risk to residents, but he quickly added that "prudent avoidance remains the best approach for any resident or worker downtown."

"It's a basic public health principal," Dr. Thurston said. "If you can avoid an exposure, you do so."

Peter M. Iwanowicz, the director of environmental health for the American Lung Association of New York State, said his organization has been receiving calls from a steady string of residents unnerved by the persistently acrid air.

"The visceral human reaction is this is, this smell is not natural; so there must be something wrong, something toxic," he said. But, he added, smells can be a red herring. "Take a skunk. What it lets loose is pretty noxious, but it won't hurt you. Compare that to carbon monoxide, which is odorless and can kill you."

Over all, he said, the lung association still tends to agree with public officials that any threat is limited to possible aggravation of breathing problems in people prone to asthma or other respiratory ailments.

Other experts say there may be other air issues yet to emerge. Altered traffic patterns and increased congestion from heightened security at the city's bridges and tunnels, for example, have created long lines of idling vehicles, which pollute the air far more than cars and trucks moving on the highways. Exhaust from gasoline-fired electricity generators and diesel vehicles involved in the cleanup are another issue should be monitored over time, they say.

But raw throats and sore eyes, an environmental expert said, should generally be likened to the effects of sitting by a campfire.

"If the smoke gets in your eyes they burn, but it doesn't mean you're going to go blind," said Donald R. Blake, a professor of chemistry at the University of California at Irvine. "This is a tough thing that people in New York are dealing with," he said. "But we're talking here about a short-term, temporary problem."

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