

August 26, 2011

**HUFFINGTON POST**

1730 Pennsylvania Avenue NW  
Washington, DC 20006

ATTENTION: Michael McAuliff

REFERENCE: iATL Batch 249141 and 249142, Materials Characterization

Dear Mr. McAuliff:

iATL received two samples on August 8, 2011. One sample was a paper white number 10 business envelope that contained grey dust/debris that was logged in as 4389292/Batch 249141. Another sample was a swatch (~4"x6") of dark tightly woven material that was covered with a thin irregular coating of grey dust. This second sample also had additional grey dust loose in the bag that held the swatch. The second sample was logged in as 4389293/Batch 249142. The samples were secured in large 1 gallon 3mil poly zip lock bags that were transferred to the laboratory with an overnight courier.

Analysis:

Each sample was tested using several analytical techniques. These included pH, Polarized Light Microscopy (PLM), Analytical Transmission Electron Microscopy (TEM) using Energy Dispersive Spectroscopy (EDS) and Electron Diffraction (SAED), and Atomic Absorption Spectrophotometry (AAS). The results are summarized below. Additional analytical reports, documentation, and references are also attached.

Results:

The pH of the sample dust ranged between 9.6 and 10.2.

The PLM analysis revealed a mixture of many components all very fine (<1mm). The non-fibrous constituents (~50%) include polystyrene foam, vermiculite mineral, combustion product (carbon soot), mineral dust of gypsum, calcite, dolomite, and quartz. The fibrous fraction (~50%) included cellulose (wood and paper fragments), fibrous glass such as glass wool with yellow resin coating, Fiberglass™, colorless mineral wool, refractory ceramic fibers, limestone, calcites, carbon fibers, synthetics (including fragments of cloth), and chrysotile asbestos associated with the lime and carbonate insulation debris.

The TEM analysis paralleled the light microscope results with additional chemical signatures of silicates, kaolin-clays, pigments (TiO<sub>2</sub>), calcites, dolomites, carbonates, metal complexes (sub-micron chromium, aluminum/iron matrices), and chrysotile asbestos.

The AAS analysis results for lead (Pb), chromium (Cr), cadmium (Cd), and Zinc (Zn) note the following concentrations....

Discussion:

The origins of the samples were revealed by the client: dust from the World Trade Center (WTC) disaster from the morning of September 11, 2001. It is not a coincidence that this laboratory has processed thousands of samples from Lower Manhattan associated with that event. The material in the dust clouds that spread over that part of New York City has been, as indicated by USEPA and others, the most characterized dust in history. Resources and references that list additional attributes of the dust are abundant. Even though two samples "does not a study make", we will focus on this limited sampling profile in relation to the analytical results.

The color and size profile of the particles in these samples mirrors those collected and analyzed at the WTC site years ago. For the most part, the dust ejected and that was distributed by the force of the building collapse resulted in sub-millimeter to sub-micron particles.

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In general the pH was indicative of various calcium carbonates, limestone, cement, gypsum, dolomite compounds, etc. that would alter any such solid mixture towards that high (caustic) pH. Though this is not a report of the health or bio/medical hazards of the tested dust, in fact that is outside the purview of this report, it can be concluded that the high pH mixture when inhaled or ingested can adversely affect the body's mucous membranes, esophagus, bronchial and nasal pathways.

The particle identification and their relative percent makeup is again, similar to the thousands of previously characterized samples. A larger sampling may have yielded information that really is a microcosm of the building from whose origin the particles were born. Accordingly, we would expect to find, and have found, those particles that make up larger building materials that include... concrete, cement, drywall, insulation, carpet, furniture, steel and metal supports, office supplies, pigments, paints, coatings, adhesives, electrical boards and components, wood, etc. Not here, but previous testing of other thousands of samples in the past also detected very fine fragments of photographs, fingernails, bones, hair, and tissue.

Some signature components that further underscore the origin of the dust include: the pH, the color and size of the particles, the percentage of particles, and the percentage of asbestos. Another signature was the nature of the asbestos (used mostly in the building insulation). Here, chrysotile was 'damaged' or pitted and had a trace level of sulfur in its elemental fingerprint. For many this is a marker or signature for what has become known as 'WTC chrysotile'.

If you have further questions or need to contact us please either call at (856) 231-9449 or email me directly at [frankehrenfeld@iatl.com](mailto:frankehrenfeld@iatl.com).

Regards,



Frank E. Ehrenfeld III  
Laboratory Director – Vice President

Cc: Alyssa Peiffer –iATL