

# Supplemental: Miscellaneous Topics

## DEW-Demolition Contrary Evidence

*By Dr. Gregory S. Jenkins*

### ***Burning vehicles***

A minivan fire in a K-Mart parking lot<sup>i</sup> illustrates several pertinent points common to vehicle fires:

- The pavement underneath the minivan is ablaze.
- The car in the immediate vicinity of the minivan catches fire demonstrating how an entire parking lot or underground parking garage of cars parked close together, as is the case in NYC, can burn serially.
- The driver-side front tire of the minivan is completely burned off.
- The driver-side door handle is missing.
- The burnt minivan resembles many of the same characteristics as burnt vehicles at ground zero including missing headlights and deformed hood.

Many of the above characteristics are claimed as proof of DEW-demolition, but are common in vehicle fires.

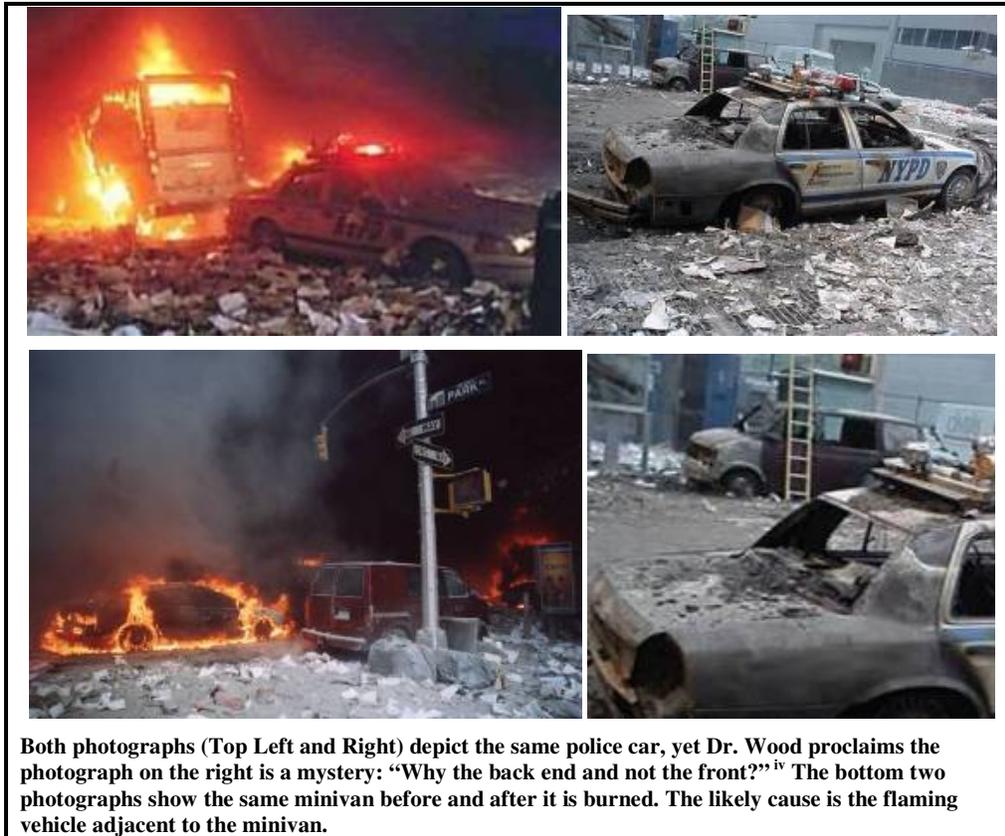
The idea that vehicles which have been smashed and then moved is vividly illustrated by the analysis done by ‘totovader’ showing the Ladder 3 fire-truck crushed by debris at ground zero (and shown below).<sup>ii</sup> However, Dr. Wood on her website asks “Why would the front of this fire truck wilt?” implying that it was not crushed by debris and moved to a new location. The videos were released *last year*, yet the obvious misinterpretation remains on her website among a litany of other discredited items.



Not only are there photographs, there exist eyewitness accounts of the placement and condition of the Ladder 3 fire truck:

*Vincent Forras is one. Forras answered the call for help as a volunteer firefighter on the morning of September 11, driving down from upper Westchester county north of the city. “My first sight upon arrival on the scene was seeing Ladder 3 totally crushed by a large block of the building and twisted into pieces.”<sup>iii</sup>*

Furthermore, she erroneously presents a picture of a police cruiser in Figure 43 within her RFC to NIST<sup>iv</sup> whose causal mechanism responsible for the rear-end charring of the vehicle was previously presented in photographs and published.<sup>v</sup> There were flames from another vehicle immediately behind the police car. Before and after pictures show the highly likely cause and effect, yet she insists on continuing to promote her misinterpretation by ignoring the published evidence.



Apart from the direct photographic evidence from GZ showing serial-type burning illustrated by the police cruiser and minivan, evidence suggests that many cars in parking lots were set ablaze by this mechanism. If one or two vehicles are ignited, then many more vehicles may burn.

One mechanism which would ignite vehicles, buildings, paper, and other flammables in the vicinity of GZ is burning material ejected during the collapse of the towers. Also, it is well established that extremely hot metal and glass were ejected from the collapsing towers which could easily ignite flammable material.<sup>v</sup>

The characteristic pattern for serial-type burning is illustrated by the clustering of burned vehicles in the Vesey/West Street parking lot. A row of 16 vehicles has burned, and another cluster of about 7 vehicles. Firemen put out the flames arresting further serial-type burning from occurring in the parking lot. Certainly, serial-type burning could easily describe nearly all the burned vehicles. The manner in which the initial one or two vehicles ignited is unknown. However, not knowing what ignited one or two vehicles should not be confused with proof of a DEW, no more so than the K-Mart parking lot video.



A parking lot located on the north-west corner of Vesey and West Side Highway approximately 700' from the North tower. A double parked car at a right angle to the other vehicles provides a common reference point in all photographs (the bottom left photographs shows the front-end tip of the vehicle's front bumper on the left side of the photograph). (Top Left) Fires rage as a fireman begins extinguishing flames. (Top Right) One cluster of about 7 burned vehicles, a row of about 16 burned vehicles, and one burned vehicle in the lower left (Bottom Right) The row of burned vehicles is clearly seen, and the NYPD tow truck makes a left-hand turn, by a partially burned or rusted vehicle. (Bottom Left) Notice how less paper appears in the vicinity of burned cars since the paper has burned away. Also notice the damp ground.

Deleted: ed

The RJ Lee Group performed an extensive study of the Banker's Trust building at 130 Liberty Street to assess structural damage as well as dust contamination. The dust analysis this group performed is, as it is self-proclaimed in the reports, one of the most

extensive dust studies performed costing 33 million dollars. Within one of the reports,<sup>vi</sup> they state:

*The WTC Dust and WTC Hazardous Substances contaminating the Buildings' mechanical, electrical, and plumbing systems are **conductive, corrosive and abrasive**. WTC Dust has permeated every component in the [Banker's Trust] Building. The WTC Dust has been shown to be **corrosive to unprotected metal**, to **affect the conductivity of circuit boards** in a manner that will cause intermittent failures, and to be **severely abrasive when present in lubricants at only five percent of the volume**.*

Dust which may be conductive can short electrical systems in vehicles which might spuriously ignite vehicle fires. Metallic particles, various carbonaceous molecules (constituents of soot, graphite, some office toners, etc.), moisture mixing with the many cations, anions, and salts, are all constituents of the dust which conduct. The electrical conduction of the dust will depend upon the thickness deposited. Thicker dust results in higher electrical conduction. This may explain why the Vesey/West Street parking lot and West Broadway/Park Place vehicles were not ignited by the initial dust cloud from the South tower, but required the subsequent added dust from the North tower collapse.

Once the fires had stripped the paint from the vehicles, the heated steel from the fire caused rapid surface oxidation. Steel will rapidly oxidize on the surface when exposed to high temperatures, moisture, and a ready supply of oxygen.

The already oxidized and exposed metal corroded at an accelerated rate after the fires subsided and the corrosive ambient dust resettled upon the vehicles. Fine dust is easily agitated becoming airborne (RJ Lee Group studied extensively this precise mechanism<sup>vii</sup>). Spraying the fires with water (either with fire hoses or the ensuing rain beginning on September 14<sup>th</sup>) dramatically accelerated the rusting process since the dust is corrosive in much the same way that salt water may accelerate the rusting of steel (note that salt water pumped from the Hudson river was actually used at ground zero to extinguish fires which certainly accelerates rusting). With regards to the rusting at GZ, note that an estimated 4 million gallons of water doused the bathtub region between 9/11 and 9/21 from rain and fire hoses:

*Most of ground zero is encircled by the Slurry Wall, 70 ft deep underground, called [the] Bathtub. **Approximately three million gallons of water were hosed on site in the fire-fighting efforts, and 1 million gallons fell as rainwater, between 9/11 and 9/21 (the day of the reported measurement).***<sup>viii</sup>

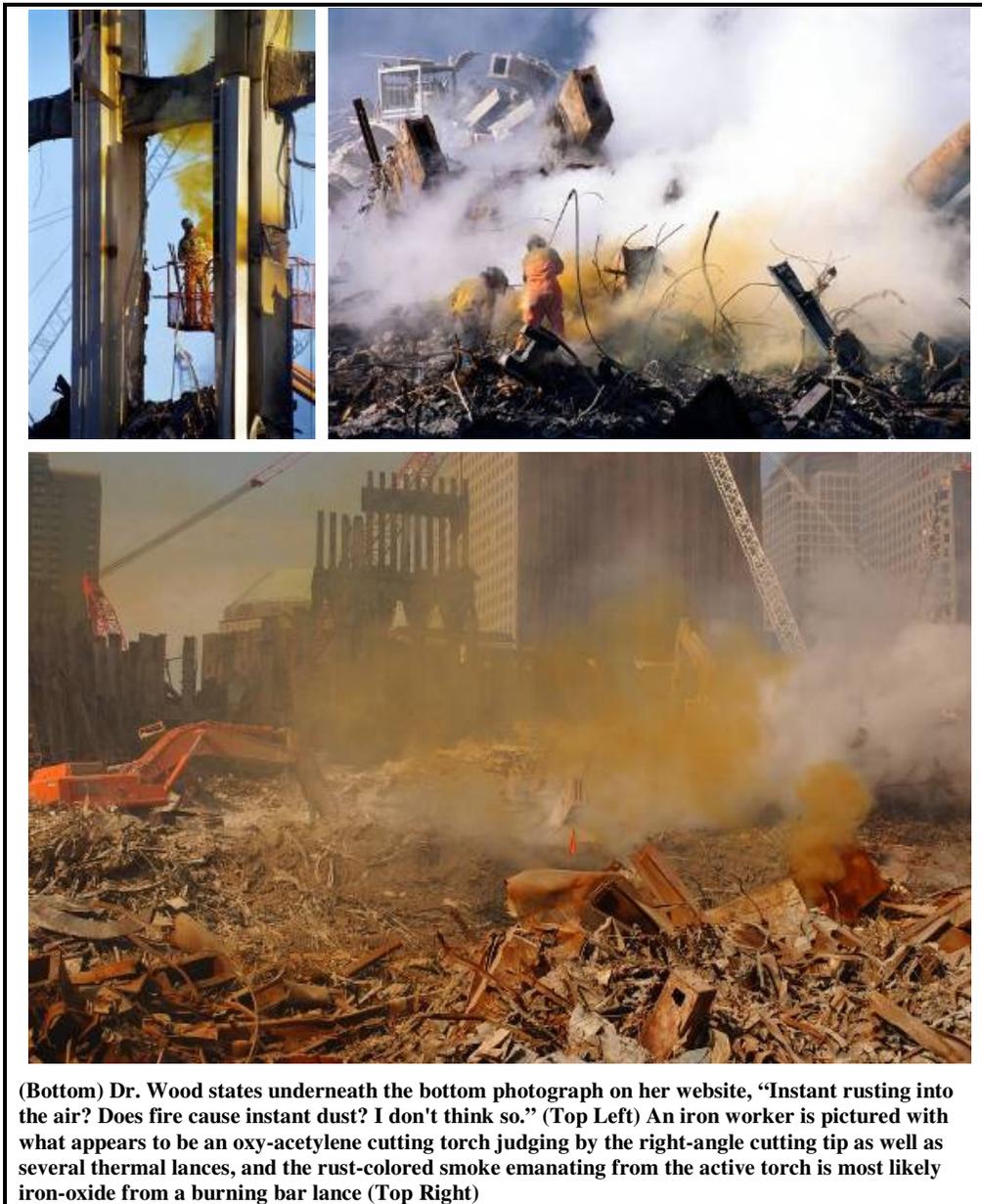
Another common mechanism which drastically accelerates the rusting of steel relies upon the contact between steel and carbonaceous particles. An electrical potential develops between the steel and the carbon particles which results in severe corrosion.

*Another example of corrosion caused by a difference of conditions is that of a pipe in contact with cinders. In this case the carbon particles in the cinder itself act as a cathode as in the case of the battery, and the potential set up between the steel and the carbon is quite high, resulting in severe corrosion of the pipe. **When backfilling steel structures, cinders are to be avoided at all costs.***<sup>ix</sup>

All the factors which are well known to increase rusting were present in the vicinity of GZ (in addition to the requisite water and oxygen):<sup>x</sup>

- 1) Heat
- 2) Presence of electrolytes
- 3) Humidity from massive amounts of water vapor generated
- 4) Contact with other metals conductors which are at a different chemical potential resulting in accelerated electrolysis

## ***Rust-colored smoke***



The ‘rust-colored’ smoke is not produced from steel spontaneously dissociating into rust-colored aerosols. The top two photos show rust-colored smoke which is obviously generated from the torches used in the cutting process. In particular, the top left photograph shows that the smoke emanates from whatever the man is burning since he is not, at that instant in time, cutting steel. The bottom photo is posted on Dr. Wood’s

website as evidence steel spontaneously converting to rusted iron-oxide particles. However, it is clear from the photograph that there is a trough behind the dense rust-colored plume to the right. The foreground material (bits of rusted steel debris) is different than the finer debris resembling dirt behind it which is itself distinguishable from the material at and behind the orange back-hoe. Based upon the top two photographs, it is easily surmised that a person is in the trough cutting steel in the vicinity of the rust-colored smoke emanating from the foreground material. The smoke appears to be coming out of the end of a box beam which is acting like a chimney. The beam extends back to the location of the small red flag. Directly to the right of the small red flag is a worker's helmet and his right ear is visible. He is most likely cutting the box beam.



**Both pictures are progressive magnifications of the same photograph presented previously. The top picture shows the box-beam channeling smoke like a chimney. Both photographs show a man's helmet and right ear. He is presumably cutting the box beam.**

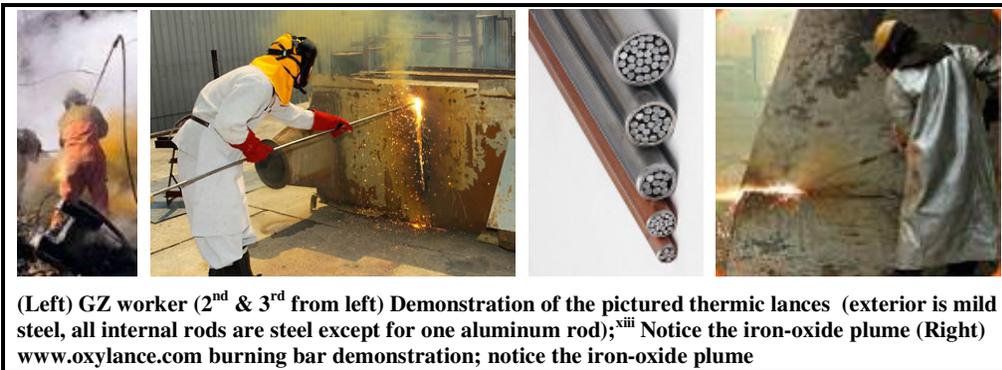
Based upon these observations, I researched different methods employed by welders to cut large quantities of thick steel and concrete. Several pertinent methods turned up. One method is known as “metal powder flame cutting”<sup>xi</sup> which utilizes metal powder (almost

always containing copious amounts of iron and aluminum) mixed with oxyacetylene. This type of method cuts non-ferrous material as well as rusted and non-rusted ferrous material. Note that the usual oxyacetylene cutting torches are only able to cut ferrous material which is not oxidized and is not particularly efficient at cutting extremely thick steel. The metal powder flame cutting method is also used to cut masonry. One disadvantage is the large amounts of smoke generated from the added oxidized metal powders.

Another method often used to cut thick steel is oxy-fuel cutting, a mixture of gasoline and oxygen. This method is favored for thicker steel (greater than about 2") since it is more cost effective than oxyacetylene and cuts more quickly.

However, both of the above methods are not the preferred methods to concurrently cut masonry.

A third method utilizes oxygen lances/burning bars, a tube filled with small rods of mostly iron<sup>xiii</sup> with a large flow of oxygen directed through the tube. The bar is consumed during cutting. This tool cuts both thick steel and masonry extremely well.



A cursory look at various oxy-lances reveals they emit the characteristic iron-oxide rust-colored smoke while cutting.

However, the generated rust-colored smoke depicted on the websites of oxy-lance manufacturers does not seem as thick as the smoke in the photographs of GZ. I realized that this could be for a variety of reasons (oxygen flow rate, added metals in the torch, rate of cutting, etc.). To be certain, I e-mailed Oxy lance, Inc. for an expert opinion as to their interpretation of what the two photographs below depict and asked "I would very much appreciate a more qualified opinion as to what the welders/steel-cutters are burning which would generate the rust-colored smoke depicted in the two photos posted below."



By complete happenstance, I received the following response:

*In the back of the catalog is a complete section on safety. It includes 4 pages that explain how to use the OxyLance burning bar. Then there is a 4 page MSDS that lists all of the elements in the smoke generated from the burning bar. **The people in the photos are using our products.** We shipped 79,000 of our 10'6" long burning bars to the site and we shipped them at our cost. Also many of the loads were shipped at no charge for freight as some of the trucking companies we use all of the time donated their services." --- OxyLance Inc., private e-mail correspondence, 6-19-07*

The material data safety sheet (see reference section for excerpt) for the OxyLance burning bar reveals the content of the dust generated during operation is overwhelmingly iron oxide with trace amounts of copper, zinc, phosphorus, sulfur, manganese, silicon, and aluminum. Temperatures of 7800F (4300C) are typical.<sup>xiv</sup>

### ***Unburned, pulverized, burnt, and burning paper***

Contrary to assertions by DEW-demolition proponents, paper burned at ground zero. There are photographs of charred stacks of burned paper in the WTC rubble (photograph below) and eyewitness accounts of burning paper raining from the sky.<sup>v</sup> The flames from vehicles would have surely ignited at least some paper (clearly evident at the Vesey/West Street parking lot illustrated in the next section), and the photographs which show vehicles ablaze lack sufficient resolution to distinguish burning paper from other flaming organics that can occur on the ground beneath burning vehicles under normal circumstances. Sheets of loose paper completely burn in a matter of seconds which may constitute the statistical reason that few photographs exist of distinguishable individual sheets of paper burning although some do exist. The explanation for lack of photographic evidence of burnt single sheets of paper is elementary: spotting small, crumpled, black remains of burnt paper from photographs is near impossible upon a background consisting of various sorts of dark debris and dust.

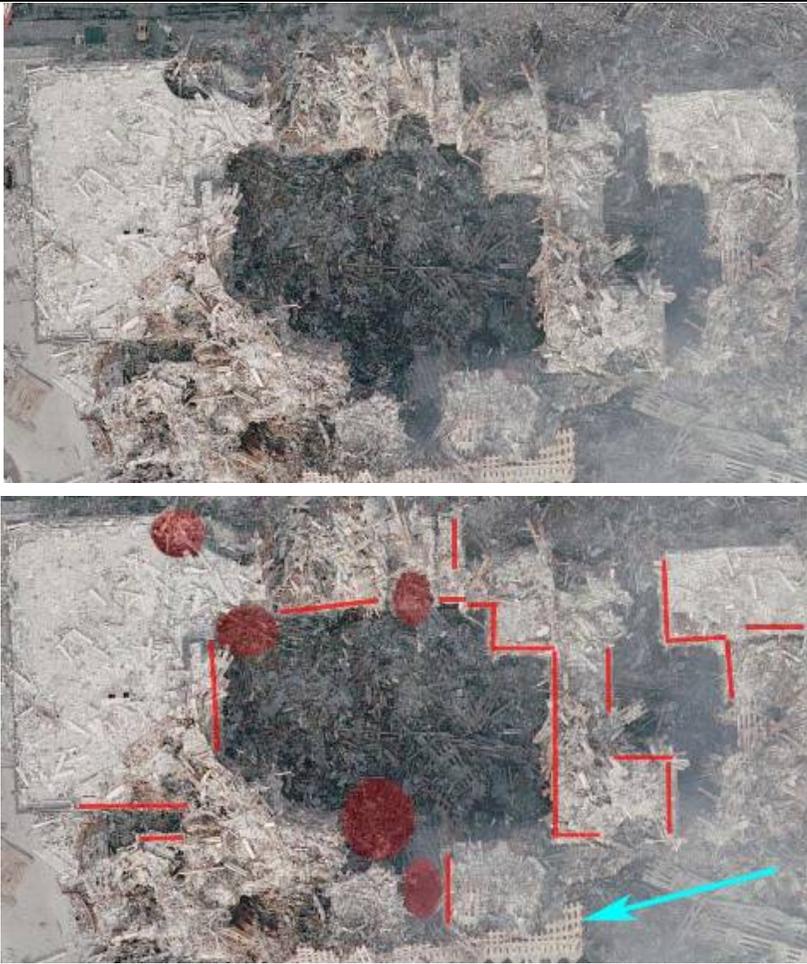


Burning paper in the vicinity of ground zero (Top and Bottom Left) Burnt and burning paper by an ambulance at Church and Dey (Top Right) Carbonized stacks of paper compressed in a 'meteorite' removed from the sublevels at GZ (Bottom Right)

Landrigan *et al* explicitly report paper remnants in the PM2.5 fraction in WTC dust stating “*Morphologically, most of the dust was fibrous and contained mineral wool, glass fibers, asbestos, wood, paper and cotton fibers (Figure 1).*”<sup>xv</sup> Lioy et al report that “*Significant amounts (~10% of the mass) of cellulose were found in all three samples. This observation is consistent with the release of large amount of disintegrated paper and other products that were originally part of the indoor work environments*”. All three dust samples he analyzed were “*mainly composed of construction debris [including vermiculite, plaster, synthetic foam, glass fragments, paint particles, glass fibers, lead, calcite, grains, and paper fragments], quartz grains, low-temperature combustion materials (including charred woody fragments), and glass chards.*” Furthermore, Lioy states “*Using microscopic analysis to generally describe the distribution of materials among the mass fractions, we found that large particles were primarily made up of building materials including gypsum, glass fiber, mineral wool fibers, wood fibbers, and paper fragments.*”<sup>xvi</sup> So, within the dust samples were massive amounts of burnt and pulverized unburned paper fibers.

In short, paper was everywhere and in all conditions which is certainly not unexpected or anomalous.

## Jagged holes



The above is an aerial view of WTC 6. The damage is often cited in support of the claim that the 'circular' holes are caused by a DEW. However, many more straight edges, corners, and jagged edges exist than partially elliptical damage. The methodology is implicitly flawed.

Damage to WTC 6 is often cited as proof of DEW-demolition because of the presence of circular holes. However, there are many more straight edges and right-angle corners using the exact same photograph. Using the simplistic methodology employed by DEW-demolition proponents, I count 5 *partial* elliptical holes, 15 straight edges, and 7 right angles.

As indicated, the above methodology is inherently and hopelessly flawed. An external isometric view of WTC 6 as well as from within the large hole of WTC 6 show that the damage is not so simplistically analyzed. A cyan-colored arrow marks the same position in the aerial photograph and the isometric view so that the reader can gauge the misleading aspects of the aerial photograph. When a third dimension, height, is

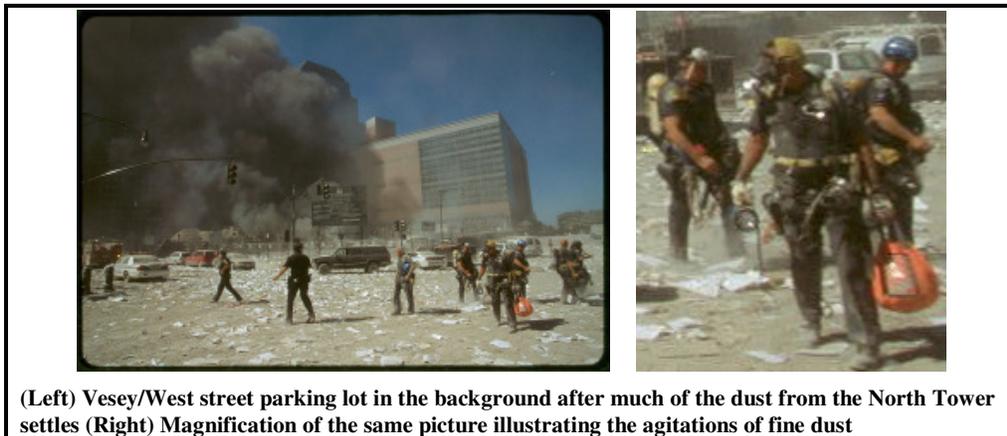
considered, it becomes apparent that much of the damage does not extend down to ground level, some damage resembles a 'stair case,' and the 'straight' and 'circular' damage is better characterized as jagged edges.



A previous analysis<sup>v</sup> of the expected amount of debris generated from the partially collapsed buildings (WTC 3, 4, 5, and 6) matches observation if sublevel collapses are included in the analysis. The damage is consistent with impulse damage from falling debris.<sup>xvii</sup>

### ***Horizontal dust transport: Low density flows***

Dr. Wood has rolled out her latest theoretical pastiche proclaiming the dust which settled to the ground around lower Manhattan proceeded to spontaneously disintegrate into fine powder.<sup>xviii</sup> She establishes the term "fuzzballs" to mean the fine particles stirred up by agitating the dust.



In the above photograph, she notes that the dust must have previously settled since the background sky is clear. She also notes that the Vesey/West Street parking lot is north-

west of GZ and the wind was blowing in a southerly direction. Both of these observations are correct, but she then erroneously presupposes that fine dust can not travel upwind and settle to the ground and, therefore, the fine dust which was stirred up underfoot was produced by the spontaneous disintegration of coarser material after settling out of the air.

Dr. Wood does not consider the obvious horizontal transport dynamics of dust and debris at GZ which are well characterized by low density flows generated by the large expulsion of air from the towers.

The expulsion of debris from ground zero was caused by air driven from the towers:

*A “horizontal ground jet” formed during the collapse of each WTC tower. This phenomenon occurs through the re-direction of the towers’ collapsing from a vertical orientation to a horizontal motion. **The ground jet reached speeds of 170 to 200 mph on the lower floors of the [Banker’s Trust] Building and 140 to 180 mph on the upper floors (wind speeds equivalent to an F3 tornado). The velocity pressure formed by the ground jet was between 50-100 psf. Pressures of this magnitude are capable of overturning large trucks.***<sup>xix</sup>

The generated wind velocity was much larger than the prevailing winds in lower Manhattan recorded that day, which were less than 10 mph (see reference section “A. Manhattan wind-speeds from EPA”). The powerful generated air currents were easily capable of transporting fine dust against the naturally prevailing wind.

The generated air currents carried dust and debris outward from the collapsing towers. Due to the density of debris suspended within the air currents, the flow may be characterized as a density flow. Since pyroclastic surges and flows are types of density flows, we can tap into the rich scientific literature of pyroclastic flow dynamics in order to understand the transport phenomenon of debris which causes various volcanic facies. Many of the basic characteristics of pyroclastic flows and surges do not directly involve the high temperatures which typically accompany them and well describe the general characteristics of density flows occurring in air.

The flow generated by the WTC towers is best characterized as a *low* density flow, or a pyroclastic surge, for two reasons. Firstly, much of the ‘sediment’ from the density flow generated by the collapsed towers which was deposited onto the surrounding streets more than a block from GZ is well known to be dust (less than 300  $\mu\text{m}$ ).<sup>xx</sup> Low density flows are characterized by deposits which are of the finer variety (“mainly clay, silt, fine- to medium-sand supported in suspension entirely by turbulence” for a low density sedimentary gravity flow).<sup>xxi</sup> Secondly, the majority of the volume of the dust cloud was gas (air). By considering the volume occupied by the dust after it all settled upon the ground compared to the volume of the dust cloud, the huge difference was obviously occupied by air. Since the deposited ‘sediment’ is of the finer variety and the gaseous volume was much greater than that occupied by the dust in the cloud, then the flow may be characterized as a low density flow.<sup>xxii</sup>

Even though a pyroclastic surge is a low density flow, the size and density of particles contained in the flow is much greater than that allowable by normal colloidal suspension. The particles remain suspended due to turbulent currents which generate time varying

vertical components of velocity within the flow which greatly overpower the influence of gravity.<sup>xxiii</sup> Once the cloud slows and the turbulent air currents subside, the air can no longer maintain the larger dust particles in suspension which then quickly settle out of the air.

In the previous photograph of the Vesey/West street parking lot, the fine and coarse dust settled out of the air when the air currents generated from the collapse subsided. The dust which remained in colloidal suspension was blown in a southerly direction which quickly ushered in clear skies. If the wind velocity was about 10 mph, and the dust cloud reached as far away as an entire mile north of GZ, then the prevailing wind would clear the sky in about 6 minutes once the winds associated with the pyroclastic surge completely subsided. This is consistent with the photographic record.<sup>xxiv</sup>

Some of the dust which settled out of the air was very fine (less than 10  $\mu\text{m}$ ).<sup>xxv</sup> When the dust is later disturbed by feet and vehicles, the finer dust is easily lifted into suspension. Recall that the terminal velocity of a 10  $\mu\text{m}$  sphere of iron is about 2 cm/sec.

On her website, Dr. Wood alludes to ‘Fuming’ which is in actuality agitation dust which is still settling from the air (evident from the photographic record)<sup>xxiv</sup> as well as finer dust being re-suspended into the air via agitation.



(Left) View from the west where the edge of the Vesey/West street parking lot observed on the right side of the picture. Dr. Wood on her website states: “‘Fuming’ from the cars can be seen up West Street north of the WTC complex.” Cars are not disintegrating into fine dust as she believes. Rather, the very fine dust is still settling from the collapse<sup>xxvi</sup> and dust is perturbed along roadways by traveling vehicles which have passed. (Right) Ash from Mount St. Helens—Yakima, Wash., May 1980.<sup>xxvii</sup> The photograph should not be misconstrued as the streets or cars spontaneously dissociating into fine powder.

### ***Dirt***

Sand and soil were transported to ground zero. For instance, sand and soil were used to stabilize the bathtub wall. Sublevel collapses near the bathtub wall occurred which caused engineers concern that the bathtub wall may cave inward due to the external pressure with no opposing internal buttressing. A large trough on the southern edge by the South tower, for example, was filled in with sand and soil.<sup>xxviii</sup>

Much of the so-called ‘dirt’ which Dr. Wood refers to on her website<sup>xxix</sup> was assuredly the crushed and pulverized building contents. To illustrate this point, while even the staunchest DEW-demolition proponents do not believe that WTC 7 was destroyed in this

manner, the WTC 7 debris pile shows the same so-called 'dirt' constituents located throughout the rubble pile.

Most of the contents from the WTC 7 building were most likely crushed from the gravitational potential energy of the building falling onto itself. Even in the case of a standard controlled demolition, most of the energy from demolition explosives is focused upon shearing steel columns. Little of the explosive energy is used to pulverize building contents. The energy released from explosives in a conventional controlled demolition of a tall building is tiny compared to the gravitational potential energy. Much more explosive energy above that necessary to shear steel columns would be necessary to match the pulverization energy associated with the gravitational potential energy of the building. The contents of WTC 7 were pulverized mainly due to the gravitational potential energy released upon impact.

Photographs of the WTC 7 rubble pile (shown below) depict constituents which superficially resemble 'dirt' throughout the pile. However, much of it is actually crushed wallboard, concrete, and office furnishings which were subsequently watered down by rain and fire hoses. This is what one would expect such constituents to look like.



**WTC 7 debris pile: Lots of crushed debris which resembles 'dirt'.**



**WTC 7 debris pile:** A look from a window overlooking the rubble pile shows a close up of crushed debris which superficially resembles 'dirt'. Note that the 'dirt' could not have been dropped on the pile from above since none exists on the exterior wall lying atop the pile.

<sup>i</sup> <http://www.youtube.com/watch?v=UHoIyk5Df58>

<sup>ii</sup> [http://youtube.com/watch?v=w\\_S6iLXJv8](http://youtube.com/watch?v=w_S6iLXJv8), <http://youtube.com/watch?v=E7J9pPD7bPU>

<sup>iii</sup> <http://www.neha.org/9-11%20report/index-Lack.html>

<sup>iv</sup> Judy Wood, [Request for Correction](#) submitted to NIST, March, 2007. Hereafter designated as 'RFC' in letter. [http://janedoe0911.tripod.com/NIST\\_RFC.html](http://janedoe0911.tripod.com/NIST_RFC.html)

<sup>v</sup> Dr. Greg Jenkins, "The Overwhelming Implausibility of Using Directed Energy Beams to Demolish the World Trade Center", *Journal of 9/11 Studies*, Volume 8 (February, 2007)

<sup>vi</sup> RJ Lee Group Inc., "Signature Assessment, 130 Liberty Street Property, Expert Report, WTC Dust Signature Report, Prepared for: Deutsche Bank", May 2004,

<sup>vii</sup> RJ Lee Group, "Technical Memorandum, R5: Active Recontamination in Test Cells", May 2004

<sup>viii</sup> Thomas M. Semkow et al., "Elevated tritium levels at the World Trade Center", Lawrence National Laboratory (University of California, Berkeley), Paper LBNL50782, Year 2002, <http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1678&context=lbnl>

<sup>ix</sup> T. R. B. Watson, "Why Metals Corrode",

<http://www.westcoastcorrosion.com/Papers/Why%20Metals%20Corrode.pdf>

<sup>x</sup> <http://www.antiessays.com/free-essays/1244.html>

<sup>xi</sup> <http://www.welding-technology-machines.info/thermal-cutting-of-metals/metal-powder-cutting.htm>,

<http://stinet.dtic.mil/cgi-bin/GetTRDoc?AD=ADA370152&Location=U2&doc=GetTRDoc.pdf>

<sup>xii</sup> [http://en.wikipedia.org/wiki/Thermic\\_lance](http://en.wikipedia.org/wiki/Thermic_lance), <http://www.krl.com.au/whatisalance.htm>,

<http://www.oxy lance.com/pdfs/msds.pdf>

<sup>xiii</sup> <http://www.krl.com.au/whatisalance.htm>

<sup>xiv</sup> <http://oxy lance.com/catalog.pdf>

<sup>xv</sup> Landrigan et al., "Health and Environmental Consequences of the World Trade Center Disaster", *Environmental Health Perspectives*", Volume 112 #6 (May 2004)

- 
- <sup>xvi</sup> Lioy et al, “*Characterization of the Dust/Smoke Aerosol that Settled East of the World Trade Center (WTC) in Lower Manhattan after the Collapse of the WTC 11 September 2001*”, Environmental Health Perspectives, Volume 110 #7 (July 2002)
- <sup>xvii</sup> Tony Szamboti , “[\*Why the damage to WTC Bldgs. 3 and 6 does not support the beam weapon hypothesis and some correspondence with Dr. James Fetzer about it\*](#)”, Journal of 9/11 Studies, Letter B, (March, 2007)
- <sup>xviii</sup> Dynamic Duo radio show hosted by Jim Fetzer, May 23<sup>rd</sup>, 2007
- <sup>xix</sup> RJ Lee Group, “*Property Damage Claim*”, Volume II Section 1, May 2003
- <sup>xx</sup> Lioy et al, “*Characterization of the Dust/Smoke Aerosol that Settled East of the World Trade Center (WTC) in Lower Manhattan after the Collapse of the WTC 11 September 2001*”, Environmental Health Perspectives, Volume 110 #7 (July 2002)
- <sup>xxi</sup> [http://www.umt.edu/geosciences/faculty/hendrix/g432/g432\\_L10.htm](http://www.umt.edu/geosciences/faculty/hendrix/g432/g432_L10.htm)
- <sup>xxii</sup> [http://en.wikipedia.org/wiki/Pyroclastic\\_surge](http://en.wikipedia.org/wiki/Pyroclastic_surge)
- <sup>xxiii</sup> <http://volcanology.geol.ucsb.edu/deposits.htm>
- <sup>xxiv</sup> <http://www.flickr.com/gp/9773403@N02/ERL77U>
- <sup>xxv</sup> Lioy et al, “*Characterization of the Dust/Smoke Aerosol that Settled East of the World Trade Center (WTC) in Lower Manhattan after the Collapse of the WTC 11 September 2001*”, Environmental Health Perspectives, Volume 110 number 7, July 2002
- <sup>xxvi</sup> <http://www.flickr.com/gp/9773403@N02/ERL77U>
- <sup>xxvii</sup> <http://pubs.usgs.gov/fs/fs027-00/fs027-00.pdf>
- <sup>xxviii</sup> [http://www.nytimes.com/library/national/index\\_WALL.html](http://www.nytimes.com/library/national/index_WALL.html), Notice the subtext that shows that the trough was filled with ‘sand and soil’.
- <sup>xxix</sup> <http://www.DrJudyWood.com>