

Elon Musk's Powerwall Would Take Almost 40 Years To Pay For Itself

Fri, 08 Jan 2016 16:00:00, admin45789, [post_tag: elon-musk-powerwall, post_tag: elon-musks-powerwall-would-take-almost-40-years-to-pay-for-itself, category: news, post_tag: shockers]

Elon Musk's Powerwall Would Take Almost 40 Years To Pay For Itself



Andrew Follett
Energy and Environmental Reporter

Tesla Motors CEO Elon Musk reveals a Tesla Energy battery for businesses and utility companies during an event in Hawthorne, California April 30, 2015. Tesla Motors Inc unveiled Tesla Energy - a suite of batteries for homes, businesses and utilities - a highly-anticipated plan to expand its business beyond electric vehicles. REUTERS/Patrick T. Fallon TPX IMAGES OF THE DAY ^

An Elon Musk Tesla Powerwall battery would take almost 40 years, or roughly four times its warranty period, to pay for itself, [according to analysis performed by the Institute for Energy Research](#).

"It would take nearly forty years for a Powerwall to pay for itself, which is almost four times the warranty period. It is highly unlikely that it would even last that long," Chris Warren of the Institute for Energy Research (IER) told The Daily Caller News Foundation.

Is Tesla A Smart Investment?

Yes No

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A Tesla Powerwall is a [\\$7,340 lithium ion-battery](#) that stores electricity for homes. The original intention of a Powerwall was to make rooftop solar panels economically viable for consumers.

A Powerwall would also take 38 years to save its owner enough money to justify the expense, according to IER. This payback time could be reduced with the purchase of a small home solar system to "only" 31 years. Tesla only offers [5 to 10 year warranties on its Powerwalls, and predicts they will last for only 15 years](#). Additionally, Tesla Powerwalls are lithium ion-batteries which [have a tendency to catch on fire or even explode if damaged in a certain way](#).

[Institute For Energy Research Calculations](#)

Institute For Energy Research Calculations

A different analysis estimates that a power-wall could save its owner [a maximum of \\$1.06 a day](#). This means a Powerwall would take 25 years to pay for itself under the best possible scenario.

"One of the biggest issues with wind and solar is that they're intermittent. A lot of folks point to battery storage as a solution, but this presents many technological hurdles and is extremely expensive. Tesla claims their new Powerwall overcomes a lot of these issues, but as our analysis shows, it remains very expensive," continued Warren.

Solar and wind power [aren't reliable because of the intermittent nature of those energy sources](#). Environmentalists [have long believed that reliable and cheap batteries could make solar and wind economical](#), which would reduce carbon dioxide emissions and help solve global warming. Tesla has work with SolarCity, another company chaired by Musk, to create Powerwall batteries theoretically capable of making solar and wind more reliable.

Supporting wind and solar power with batteries is extremely expensive, particularly in regards to home use. Even after billions have been put into battery research by Apple, Samsung, and other huge technology companies, batteries aren't improving quickly. Despite [enormous amounts of financial support](#) from both the private sector and the government, [only small gains in battery capacity and reducing costs have been made](#).

It is currently impossible to economically [store power for times when the sun isn't shining and the wind isn't blowing](#).

[One of the world's largest and most powerful batteries](#), located in Fairbanks, Ala., weighs 1,300-metric tons and is larger than a football field. It can only provide enough electricity for about [12,000 residents, or 38 percent of Fairbanks' population, for seven minutes](#). That's useful for short outages, which happen a lot in Alaska, but isn't effective enough to act as a reserve for solar and wind.

The best way we have of "storing" power is [pumping water up a hill](#), which actually accounts for [99 percent of all global energy storage](#).

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Read more: <http://dailycaller.com/2016/01/06/elon-musks-powerwall-would-take-almost-40-years-to-pay-for-itself/#ixzz3wiFLlqqd>

Elon Musk was told in writing, by multiple parties, since 2007, of all of these dangers, yet he chose greed over transparency in a case that makes the **GM Ignition Switch, Volkswagen Diesel Emissions Settings and Takata Airbag Scandals** look like minor cases. Here is the story of epic fraud and deceit, against the public, enabled by corrupt politicians.

Public officials have been intentionally covering up a safety issue, reported to them, by multiple parties, in writing, as early as 2008, that has cost American lives, destroyed homes and introduced cancer and fetal damaging vapors into the environment.

[\(For Background, see this book on Tesla, that the internet Media Alliance Put Together. Click here to download it\)](#)

The facts upon which these statements are based are proven by tens of thousands of published news stories, which document these incidents actually occurring, and, ironically, on published state, and federal reports, documenting credible findings which prove that these horrific safety incidents have occurred, and will continue to occur.

While these dangers are even more profoundly documented than the GM ignition switch disaster and the Takata air bag crisis, and far earlier, nothing has been done about the danger, aside from having Google remove all references to it on the Internet.

Why is this being covered up?

What sort of malfeasance would incite public officials to hide the facts about such an epic public danger?

GREED!

It turns out that Senators, and their families, ie: Feinstein, Reid, etc. covertly own stock and business interests in the companies that are creating the death, toxicity and destruction.

It turns out that current, and former White House staff, ie: Gibbs, Axelrod, Plouffe, Eric Holder, etc. covertly own stock and business interests in the companies that are creating the death, toxicity and destruction.

It turns out that Department of Energy leaders including Steven Chu and his staff, not only own stock and business interests in the companies that are creating the death, toxicity and destruction; they also help run those companies.

It turns out that State of California officials, including Tax and Controller officials, gave money to the companies that are creating the death, toxicity and destruction; and then helped take campaign funds in, from those companies, for themselves and their bosses.

It turns out that the Silicon Valley campaign manipulators who gave money to all of the above, including John Doerr, Eric Schmidt, Steve Jurvetson, etc. own parts, or all, of the companies that are creating the death, toxicity and destruction.

The facts are obvious: **Idiotic self-centered greed, by public officials, created a threat to public safety by placing personal profiteering over consumer welfare.**

This is a demand for justice and protection, on behalf of the public. It is unconscionable that American, and international, voters and consumers should have their lives, homes and health put at such risk by the wanton greed of out-of-control public servants.

The related 300+ page documentation report, ([Federal Demand Report Re: Tesla Motors 2.1.pdf](#)) associated with this call for justice and consumer protection reveals, in stunning detail, the vast number of highly documented incidents, reports, lab tests and expert studies that prove that Tesla Motors is, not only, a scam; but a severe public safety hazard that has been systematically covered up by corrupt politicians.

The facts are clear.

The following facts are now documented in numerous broadcast, and published, news reports; federal reports, university studies and investigation field reports. The FBI, GAO, NHTSA, SEC and Congressional authorities have now received all of the confirming evidence, in writing:

- Tesla Motors batteries were promoted by those who wished to exploit the Afghanistan War for personal profit by controlling the Afghan lithium mining fields
- Tesla Motors batteries blow up on their own
- Tesla Motors batteries blow up when they get wet
- Tesla Motors batteries fires cannot be put out by any common fire-fighting resources
- Tesla Motors batteries set themselves on fire
- Per MSDS documents, Tesla Motors batteries emit cancer-causing vapors when they burn
- Tesla Motors Vehicles toxicity poison bystanders, nearby vehicular passengers, airline passengers in planes carrying said batteries in their holds, and environments where such incidents occur
- Fires in Tesla Motors vehicles turn the entire car into a slag pile of melted metal and plastic and turn the bodies, inside the Tesla, into "unrecognizable lumps"
- Tesla Motors batteries blow up when bumped by the same level of car incident that would, otherwise, only dent a normal car bumper
- In an accident, when a Tesla rolls over, molten metal and plastic can drip on and burn the occupants alive
- Per MSDS documents, Tesla Motors batteries emit brain damaging chemicals when they burn
- Per MSDS documents, Tesla Motors batteries emit chemicals, burning, or not, that can damage an unborn fetus
- Per MSDS documents, Tesla Motors batteries emit chemicals that can cause lung damage
- Per MSDS documents, Tesla Motors batteries emit chemicals that can cause liver damage
- Per published lawsuits and news reports, the factories that make Tesla Motors batteries have been charged with the deaths, and potentially fatal illness, of over 1000 workers and the poisoning of nearby towns
- Panasonic, Tesla's battery partner, has been charged with corruption, toxic poisoning, dumping and price fixing by, at least, two different nations, including the U.S.
- Tesla Motors batteries become even more dangerous over time, particularly when tasked by electric transportation systems like Hover-boards and Tesla's.
- Tesla Motors batteries were never designed to be used in automobiles. Tesla used non-automotive batteries in one of the most dangerous configurations possible
- Tesla Motors occupants experience higher EMF radiation exposure than gasoline vehicle occupants
- Elon Musk's Space X vehicles and Tesla Motors vehicles have both had a higher-than-average number of explosions. This has caused outside experts to doubt Musk's ability to place safety considerations over his need for hyped-up PR
- Leaked Sandia National Labs and FAA research videos dramatically demonstrate the unstoppable, horrific, "re-percussive accelerating domino-effect" explosive fire effect of the Tesla Motors batteries
- Tesla's own "Superchargers" and home 3-prong chargers have set Tesla's, homes and businesses on fire
- Consumer rights groups contacted Erick Strickland, the head of the NHTSA, and charged him with a cover-up. He quit days later. The NHTSA then issued a safety investigation request to Tesla Motors, which would have more publicly exposed these dangers, but the safety investigation was never under-taken due to White House requests and lobbyist bribes, from Tesla, which got the investigation shut down
- NEPA regulations for the Tesla NUMMI factory in California and the Nevada Tesla "Gigafactory" have been violated relative to environmental safety standards
- Tesla Motors vehicles are not "Factory Built" "like Ford" builds cars, as Tesla professes. They are hand built in small volumes and subjected to numerous defects. Blogs have documented hundreds of defects, as listed by Tesla owners. Tesla has lost at least one LEMON CAR LAWSUIT for defective manufacturing
- Tesla's "showrooms" are often "pop-up" retail storefronts that are in tight-proximity retail centers, putting it's neighbors at risk of total loss from fire damage
- Tesla Motors vehicles have been hacked and taken over. Their doors, steering, listening devices and navigation have been taken over by outside parties. Multiple Tesla have suddenly swerved off the road, over cliffs and into other vehicles, killing bystanders and Tesla drivers
- Three Tesla top engineers and two competing senior executives, all of whom had whistle-blown on Tesla, who were in perfect health one day, suddenly died mysteriously the next day
- Multiple employees, founders, investors, marital partners, suppliers and others have sued Tesla Motors, and/or it's senior executives for fraud
- The above, and over 30 additional safety issues with Tesla Motors vehicles, have been documented, yet investigations have been covered up, and/or manipulated by public officials with a financial and political investment in Tesla Motors and lithium ion batteries. This level of cover-up is said to be a felony-level crime

Not all public officials have been implicated. Senator Chuck Schumer once publicly called for a safety review of lithium ion batteries but was shouted down by his peers. The public is encouraged to seek out public officials who will take action, on behalf of the public. The public is also encouraged to sue Tesla Motors in order to call attention to these outrages. Members of the public are taking this news article to staff at Tesla show-rooms, and factories, world-wide, as well as the landlords, adjacent retail merchants and each of their insurance companies, globally. It is hoped that all adjacent parties will adjust their insurance coverage, accordingly, relative to these now, widely documented, issues. At a point where the voting public have told leading polls (including Gallop, etc.) that they have the lowest trust in the U.S. Congress, in history, and the highest disdain for CORRUPTION, in a national election year, it would seem to be "political suicide" for public officials to further this cover-up.

The Tesla GigaFactory: DEATH IN THE DESERT

Hundreds of Square miles of toxins in the wake of so many dead workers that even China didn't want the factory in China!

Video Player

The Gigafactory: Death In The Desert

When reporter Andy Barron was attacked and beat-up by Elon Musk's hench-men at the construction site for the Nevada Tesla "Gigafactory", the toxic secret about Tesla's dirty plans started to unravel.

Was the death of Gary D. Conley, the Cleantech CEO found with a bullet in his head, in the scrub brush behind the Air Force base, also connected to this? Conley blew the whistle on side-by-side federal funding scammers Solyndra (Raided by the FBI) and Tesla.

There are quite a large number of beat-up, harassed and dead bodies in this tale!

To understand why a "green car company" might go to such lengths you need to go to the drugstore and buy a big sponge and a little bottle of black India ink.

Get a one inch, or thicker, sponge that is super dry, not one of those slightly moist kinds. Try to find one about 4 inches by 6 inches.

Now take a dinner plate and pour about a quarter inch of ink on it.

Now drop the perfectly dry sponge on top of the ink and OBSERVE!

The black stain starts at the bottom of the sponge and creeps UP, through the whole sponge, until the entire sponge is black. That was interesting but...wait, something isn't right, you say to yourself...GRAVITY! Huh?

Yes, you just watched something seem to "defy gravity". A material, on its own, seemed to go up, and left and right, against the flow of gravity. But, wait, that's not what you were taught in school!

That plate full of black goo is the Tesla Gigafactory and its run-off, that dry sponge 500 miles of the dry desert soil of Nevada. The black goo, itself, is one of the most lethal cocktails of chemicals that mankind has ever attempted to commercialize.

The reason the Tesla Gigafactory is hidden behind sand-swept berms in the desert is because they don't want you to notice it. They want it to deliver its toxic package to the soil, air and workers of Nevada in a tidy, hidden package.

Those toxins can move through hundreds and hundreds of miles of the air.

Those toxins can move DOWN through miles and miles of soil and then SIDEWAYS, in every direction, for over 500 miles! Yes, solid soil has toxic rivers that creep through it, and never stop spreading. Tesla is a Death Factory.

In China and other parts of Asia, the same kind of battery factories have killed thousands of workers, poisoned hundreds of towns and inflicted tens of thousands of people with deadly diseases and mutated babies. Elon Musk and Harry Reid knew that these dangers existed by they wanted the tens of millions of dollars in profit, that they plan to make off of this factory.

All of the current Tesla batteries and every future planned Tesla batteries using chemicals which are proven, without question, and by the U.S. Government, to be deadly. When mixed together they become worse. While mixing them together, as a worker, they kill you in an amazing number of ways. This is not speculation. Read the federal MSDS sheets on each chemical and combination of chemicals.

Look at what happens to a worker even 100 feet from the dust created by the powders used in the batteries. Those powders can travel to Reno and Las Vegas, on the wind, in minutes. Elon Musk says: "Don't worry", walk away, nothing to see here. He says that the only immediate neighbors are "funky warehouses", why worry? Know will care about a few poisoned hookers. He lies.

The toxic air and water from the Tesla Gigafactory will reach all of Nevada and Utah and California and keep on going. Green advocates wring their hands at "Climate deniers" and cry that "Those who ignore scientific facts and historical documentation of damage to humans should be put in jail!"

In the case of the Tesla Gigafactory, The U.S. Government, and every major University has released deeply peer-reviewed scientific proof that Tesla's battery chemicals explode, cause fires, kill, cause cancer, kill towns, poison crops, travel vast distances in the air and soil, cause brain damage, cause liver damage and mutate the fetus. The indisputable historical facts about these factories in China and Southeast Asia has proven that those dangers always happen.

The scientific proof is rock-solid. To allow the corrupt Tesla operation to continue is a crime against humanity. Elon Musk, and his partners, may even kill to hide this trillion dollar lethal secret.

The Technical Background:

Let's begin by looking closely at the soil. Because chemical transport, interactions and transformations occur in soil, soil composition is important in water and chemical movement. Soils are composed of three phases; solid, liquid and gas. The solid phase includes primary particles of sand, silt, and clay, organic matter, and rocks and minerals too large to be classified as sand. Soil water is the liquid phase, and air is the gaseous phase. Water and air fill the void space in soils. The amount of air and water in the void space influences microbial activity, water movement and chemical movement in soils. In saturated soils, the void space is filled with water.

Although saturated flow conditions may occur, under prolonged saturation, anaerobic processes begin to prevail. As water cycles through the environment, it carries dissolved Tesla chemicals. Water movement is generally the most important process that transports chemicals through soil.

Tesla's manufacturing activities contribute to chemicals in water and soils. These chemicals may come from Tesla's cars, factory transport trucks, applied compounds, waste products, or accidental spills. Specific examples include sewage, wastes, cleaning processing wastes, industrial chemicals, dry cleaning solvents, landfill leachate, fuel, motor oil and factory equipment cleaning products. Chemicals are seldom put in water to intentionally degrade water quality. Rather, as water moves from the soil surface to groundwater (or surface water bodies) it contacts chemicals in the soil and dissolves some of them.

The water carries those dissolved chemicals with it as it moves. The major processes that move chemicals through soil are diffusion, convection and hydrodynamic dispersion.

Diffusion
Diffusion is the movement of Tesla's toxic chemicals from areas of high concentration to areas of low concentration. Diffusion occurs due to the random movement of chemical molecules. This motion is due to nonuniform, random collisions of molecules. An example may help us visualize this concept. The billiard balls act as individual molecules would, by distributing themselves more evenly within the available space.

Since the number of collisions tends to be greater where many billiard balls are located, the collisions tend to move a ball away from other balls. Similarly, molecular collisions result in molecules moving from regions of high concentrations to regions of low concentrations. Compared with other transport processes, diffusion is a relatively slow process. You can see an example of gaseous diffusion utilizing a glass tube with cotton batting stuffed in both ends. Hydrochloric acid is added to one end of the tube, while the opposite end receives ammonium hydroxide. Both substances produce gases that diffuse from the ends of the tube toward the middle. Where the two gases meet, they react chemically producing ammonium chloride, visible as the white powder being formed at the location where the gases meet. Because diffusion is slow compared to chemical transport in convecting water, diffusion is not readily apparent when viewing water and chemicals moving through soil.

Convection
Convection is fluid motion caused by external forces. An example of convection is water flowing along a stream bed. This flow occurs when water moves from higher elevation to lower elevation. This flow is due to a difference in energy levels at the two elevations. Water at the higher elevation (point A) has a greater potential energy than water at the lower elevation (point B). This potential energy difference causes the water to move from point A to point B. When the potential energy difference is large and occurs over a short distance, the water moves quickly. We see this in rapidly flowing surface runoff water, streams and waterfalls. When the gradient of the soil surface elevation is small, the flow of water down a stream is fairly slow. Movement of water and chemicals in soil occurs due to differences in the potential energy of water in the soil. The potential energy level is usually due to gravity and attractive forces associated with small pores between soil particles.

In a demonstration, the potential energy of soil water is much larger in the wet soil near the soil surface than it is in the dry soil below. As infiltration begins, the distance between the soil surface and underlying dry soil is small, so the soil water potential energy gradient is relatively large. Consequently, water moves fairly rapidly into and through the soil. Later, when the same soil is wetted to a much deeper depth, the distance between the soil surface and underlying dry soil is larger. The soil water potential gradient is now much smaller. Consequently, water moves into and through the soil much more slowly.

Whether it moves rapidly or slowly, this flow of soil water is called convection. The transport of chemicals in soil water is called advection.

Hydrodynamic Dispersion
When water moves through soil, it travels around soil particles and rocks, following flow paths that act like a bundle of capillary tubes of different lengths. Water and chemicals following these tortuous paths create a phenomenon called hydrodynamic dispersion. (1) Two water molecules may follow different flow paths, so the actual distances they travel may be quite different. So, they may arrive at the same destination at substantially different times. (2) Since the actual water flow paths in most soils must curve around solid soil particles and air space, water and dissolved chemicals follow a tortuous path. This demonstration helps us see how the length of the flow path affects the arrival time of water and chemicals. The two tubes represent two different flow paths water may take when leaving point (A). Both tubes begin at the same point, but one is fairly short, and the water leaving (A) arrives at (B) quickly. The second tube curves frequently, creating a tortuous path for the water to follow. Consequently, the distance water must travel to arrive at point B is greater if it travels through the tube on the left. Saturated flow through soil is similar to flow through different length tubes. Therefore, chemicals entering the soil at the same time arrive at a given depth at different times. When a chemical first appears at a point below the soil surface, its concentration in the soil water will be less than the concentration at which the chemical was first applied. This is because of dilution, which occurs independently from any interaction of the chemical with soil particles.

This model helps us begin to understand some of the important concepts of how water and chemicals move through soil. Water movement in real soil is not so ideal, however. Soils are not uniform in texture or structure; or in the distribution of their organic matter. Some pore spaces between soil particles may be blocked, SLOWING water and chemical movement. Large cracks, animal burrows and former root channels may exist which allow rapid movement of water and dissolved chemicals.

When water and dissolved chemicals move in a non-uniform manner through soil, the movement is often called preferential flow. Soil layers of differing textures and densities can also cause the flow of water and chemicals to vary.

Interactions
Chemical characteristics influence the ability of substances to be transported. Characteristics of particular interest include solubility, sorption and density. Chemicals that are more soluble at the soil's pH tend to move more easily with water than chemicals that are less water soluble. In contrast, chemicals with lower water solubilities will tend to attach to clay particles and organic matter near the soil surface. Some of these will form chemical precipitates. If soil particles are moved by water or wind erosion, attached chemicals will move with them. In this way, chemicals are carried across the soil surface away from their point of application, and sometimes into surface water. Chemicals that are only slightly water soluble can still reach surface or ground waters. However, their rates of movement will tend to be slowed through interactions with soil particles.

Adsorption often refers to the process where molecules are attracted to the surface of soil particles. True adsorption occurs when molecular layers form on a soil particle surface. When molecules commingle with another substance, we refer to the process as absorption. Most soils absorb water and chemicals, although in amounts much less than those adsorbed. In practice, it is difficult to distinguish between absorption, adsorption and other processes. Desorption is the process by which molecules are detached from the surface of soil particles. Adsorption and desorption usually occur simultaneously. Molecules and ions are continually transferred between the soil solution and soil particle surface.

Since the specific process is difficult to measure, the more general term, sorption, can be used to describe how a chemical is held in the soil. Clay particles and organic matter are the most chemically active soil solids. They are the major soil components to which chemicals sorb. Most chemicals are subject to forces of sorption. Examples include simple inorganic ions such as calcium, sodium, and ammonium. Complex organic chemicals such as humus, many pesticides and industrial solvents are also sorbed onto soil. Chemicals such as phosphorus, and similar Tesla chemicals, that are strongly sorbed to soil particles near the surface of most soils will tend to contaminate surface water if erosion is a problem.

Chemicals, such as nitrate, that are more water soluble and less strongly sorbed to soil particles, will tend to contaminate ground water if rainfall or irrigation exceeds plant water use. Positively charged ions (called cations) are attracted to a negatively charged site on clay or organic particles. The movement of cations between clay or organic particles and the surrounding soil water is called cation exchange. It is an important process. It controls the mobility of many chemicals through the soil profile. Cation exchange is seldom observed with most organic chemicals that might be added to the soil, because few organic chemicals carry positive charges at a normal soil pH. However, some examples do exist. The pesticides Paraquat and Diquat are examples of cationic pesticides that can be sorbed onto soil particles through cation exchange. A number of other bonding mechanisms exist by which organic compounds are sorbed to soil surfaces.

For any given Tesla manufacturing or cleaning compound (organic or inorganic), it is likely that a combination of mechanisms is responsible for sorption onto soil. Whatever the mechanism, soil organic matter is the principal sorbent for many nonionic organic chemicals. It is important to know a particular chemical's attraction to organic matter, and the amount of organic matter available in a particular soil.

Then one can estimate the leaching potential of various chemicals used in a management system. Many demonstrations show two chemicals, one is sorbed to the soil, the other is not. A yellow solution, like nitrate, is not sorbed to the soil, while a red, like ammonium, is sorbed. Because it is not

sorbed, the yellow solution reaches the bottom of the soil column fairly rapidly, while the red solution is sorbed to the soil surface, restricting its downward movement. It should be noted that while the soil retains red solution, the soil does not prevent it from moving downward. The soil merely slows the rate of the red dye movement, relative to the rate of the water movement. Obviously, the same amount of water moving through the soil would affect the depth of movement of these two chemicals quite differently. Chemicals applied to land surfaces are not the only source of contaminants affecting ground and surface waters. Fluids that leak from underground storage tanks can also move to ground water, and can move to nearby surface water. Frequently such chemicals do not mix with water. Their transport is less predictable than transport of chemicals that are more soluble in water. One interesting aspect of chemical transport involves whether chemicals are more or less dense than water. This demonstration shows a chemical developing fingers because it is more dense than water. These fingers of concentrated chemical sink to the bottom of the water column before they appreciably mix with the water. Spilled chemicals that are more dense than water will tend to sink to the lower depths of a ground water aquifer.

Chemicals that are less dense than water (for example, gasoline) will tend to float near the top of a ground water aquifer. Without significant mixing due to groundwater movement, chemicals that are approximately the same density as water tend to remain near the top of a ground water aquifer. So, chemical sorption to soil particles, chemical solubility and chemical density all affect the rate of chemical transport.

Transformation
Tesla chemicals undergo numerous transformations in both soil and water. Hydrolysis, photolysis, oxidation, and reduction are some of the most common transformations. Hydrolysis is the cleavage of molecules by water, and is one of the most important reactions in breaking down pesticides. Hydrolysis can occur in the soil with or without microorganisms. Photolysis is the process where ultraviolet or visible light supplies the energy for decomposition of chemical compounds. Photolysis can be a very important chemical transformation process.

Oxidation is the process where a chemical loses electrons, such as rust forming on iron. **Reduction** is the process where a chemical gains electrons. Reduction can be a non-biological process, or a biological process as in anaerobic

sewage treatment.

The transformation frequently simplifies the chemical nature of the substance. Degradates or metabolites are the terms used for products transformed from the original chemical.

These products may be sorbed to soil more or less strongly than the original compounds. They may also be more or less hazardous than the original compound. For example, Malathion is an organophosphate insecticide commonly used both in agriculture and in and around commercial and private residences. Soil bacteria may chemically convert Malathion into a closely related compound called Malaoxon, which is more toxic than the Malathion itself.

One demonstration shows how chemical transformations can occur in soils. The rate at which such transformation occurs depends upon the location of the chemical in the soil. If a transformation is biological, and it is enhanced by aerobic conditions, it is likely to occur more rapidly near the soil surface. The soil surface has more nutrients and oxygen available for microorganisms to grow. One demonstration also shows that two different chemicals, represented by red and yellow colors, may be transformed at different rates. The red dye is rapidly degraded and becomes colorless, while the yellow dye is only slightly degraded during this demonstration. For transformations that involve organic chemicals, such as most pesticides, we use the term half-life in discussing the rate of transformation. This simply describes the length of time required to transform 50% of the existing chemical. The amount of chemical remaining reflects an exponential decrease over time, since after one half-life time period, 50% of the original chemical remains. After two half-life time periods, 25% of the original chemical remains. After three half-life time periods, 12.5% of the original chemical remains, and so forth. The "model" used to describe the disappearance of the original chemical over time creates the perception that: (1) the chemical never is completely transformed, and (2) the transformation rate is well defined. Neither is completely true, although experimental data are often reasonably well described by this exponential decay model.

The combined effects of water movement, soil interaction and transformations determine chemical concentrations below the root zone. Let's look at examples of two toxic Tesla chemicals as they move through soil. In the first example, a chemical that is strongly sorbed to a soil is compared with one that is only moderately sorbed. We assume rainfall or irrigation exceeds crop water use, for at least some of the days during the growing season. We also assume the half-life of each chemical is the same and the water table is well below the root zone of the crop. The moderately sorbed chemical moves noticeably deeper into the soil profile after rainfall. The strongly sorbed chemical moves much more slowly. Half way through the season, the moderately sorbed chemical is below the active root zone of the crop, while the strongly sorbed chemical is still near the soil surface. The strongly sorbed chemical is less likely to contaminate the ground water. However, if substantial soil erosion occurs, we would expect to find the strongly sorbed chemical and sediment in nearby surface water. Depending upon the depth to ground-water, the moderately sorbed chemical may be degraded before reaching the water table. Conversely, if the water table is near the bottom of the root zone, it is likely that the moderately sorbed

chemical will find its way into ground water before it is completely degraded. The second example includes two chemicals that are moderately sorbed to soil. The first chemical has a relatively long half life; the second chemical has a short half life. When they move below the root zone near mid-season, the first chemical is still present in fairly high concentrations. The second chemical with the shorter half-life is present in low concentrations. The chemical fronts tend to broaden as they move downward. This is due primarily to hydrodynamic dispersion, although some diffusion also occurs. Hydrodynamic dispersion spreads out the chemical and reduces its maximum concentration at a particular point in the soil.

Summary:

Summary Point #1: The concepts of diffusion, convection, and hydrodynamic dispersion relate to the transport of Tesla's toxic chemicals through the soil.

Summary Point #2: Solubility, sorption and density are the characteristics that have the most influence on the way toxic Tesla chemical substances interact with soil.

Summary Point #3: As toxic Tesla chemicals are transported through soil, they can be altered by biological or chemical processes, or remain relatively unchanged.

Summary Point #4: Transformations may form new substances which may be more or less environmentally hazardous than the original Tesla chemical. Transformations may also produce substances that have different characteristics than the original chemical. These characteristics may affect the ability of the substance to be sorbed, degraded or dissolved. Tesla has no plans, systems or technology planned, or in place, to measure these chemical changes between their factories and the borders of various cities and states

It is a total lie, by Elon Musk, for him to say that the poisons from the Tesla factory will not soon end up in every structure in Las Vegas, with a concrete foundation. Concrete is a sponge. While Harry Reid, Dianne Feinstein and Elon Musk, who all own stock and other financial assets in this, and related ventures, would like these facts covered up, they are now available for your introspection.

How To Document These Dangers:

Previously- You needed to hire a deep drilling truck, an entire testing lab and drill out a grid across many miles of land at massive expense per drill site. That is no longer needed. You can now test counties and neighborhoods with handheld test devices that are far less expensive. Many groups buy their own systems and have parents swap neighborhood testing duties supervised by a technical aid.

Devices to self test include, but are not limited to:

<http://www.bruker.com/products/x-ray-diffraction-and-elemental-analysis/handheld-xrf/s1-turbo-sdr/s1-turbo-sdr-overview.html>

http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=4997968&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs_all.jsp%3Farnumber%3D4997968

<http://cwmi.css.cornell.edu/soilquality.htm>

<http://www.sciencedaily.com/releases/2010/06/100609201310.htm>

and many hundreds of other devices.

Once generalized testing has targeted problems, limited testing can be conducted and the test cores can be tested on-site with the hand-held devices.

Many outsourced testing companies are controlled by your opposition, so be careful. Try to do it all yourself and control everything.