

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

In re: East Palestine Train Derailment : CASE NO.: 4:23-CV-00242-BYP

Settlement Objection

: JUDGE: BENITA Y. PEARSON

AFFIDAVIT OF DR. GEORGE THOMPSON

I, George Thompson, upon personal knowledge and expertise, certify that the following statements are true and accurate to the best of my knowledge, understanding, and belief and that the criticisms and opinions expressed are made in good faith, based on my knowledge and experience, and in accordance with scientific, industry standards.

1. My educational background, experience, and expertise is as a toxicologist and expert witness.¹ I have served as an expert witness in over 50 cases. I am President and CEO of Chemical Compliance Systems. I am a toxicologist with over 55 years of experience in chemical, product and process hazard and risk assessments. I have published 21 hazardous chemical books, organized four national or worldwide conferences, and given hundreds of technical presentations.

¹ I received my Ph.D. in toxicology/pharmacology in 1969. After 14 years' experience in industrial hazard and risk assessments, environmental evaluations, medical compliance, product development, chemical research, and safety/health computerization, I founded two precursor companies and Chemical Compliance Systems, Inc. (CCS). These occupational and environmental consultation companies have developed the largest hazardous chemical and product databases and over three dozen Web-based analytical compliance modules. Six of these modules utilize "green" criteria from the national standard (ANSI-355) to quantitatively assess chemical hazards and product, process and waste stream risks.

I have published 21 hazardous chemical books, 39 technical/research articles, hosted two worldwide and three national safety/health conferences, trained over 10,000 employees, and given hundreds of technical and management presentations. I also foresaw the need and developed comprehensive chemical product databases over 30 years ago, designed a uniquely comprehensive chemical hazard rating system, developed the only system available for quantitatively defining "green," or "environmentally preferred products," copyrighted a hazard warning SAF-T-LABEL®, developed a computerized laboratory evaluation procedure, and designed dozens of customized compliance cost reduction capabilities for diverse clients).

2. I have reviewed the video of Dr. Arch Carson that was presented to class members during a Zoom meeting on August 1, 2024. Dr. Carson's answers were reproduced below with the assistance of an AI generated transcript that I reviewed for substantial accuracy.
3. My general assessment of Dr. Carson's statements to class members is that they were incomplete and unreliable, and contained inaccurate if not, dangerously misleading information.
4. I respond to each of Dr. Carson's prepared answers to the 10 written questions as follows:

Q1: What chemicals were released during the derailment and vent and burn?

Carson: "There was a fairly short list of chemicals released during the derailment itself. In addition,... the fire that resulted and the vent and burn also released vinyl chloride into the atmosphere and products of combustion and heat decomposition also released products primarily into the atmosphere.

My Response: This is a gross misrepresentation of the magnitude of this complex chemical apocalypse. There were 24 different products in the 52 cars of this derailment. Of the 24 products, 8 were carcinogens (including vinyl chloride), 16 additional products were other hazardous chemicals or products. The fires released 119 chemicals that are known carcinogens. The railcars designated on the Norfolk Southern manifest as burned contained 5,330,000 pounds of materials, and the cars listed as "impinged" contained an additional 3,220,000 pounds of materials, for a total of 8,580,000 pounds of chemicals released into the atmosphere. The chemicals involved in this disaster were not a "short list."

Q2: What were the amounts of contamination at different distances from the derailment?

Carson: "The farther from the derailment, the lower the concentrations were . . . at the time of the derailment, there was very low wind speed and the plume of the materials from the derailment moved up high into the air before it contacted the community."

My Response: This statement ignores the fact that on the day of the derailment there was a temperature inversion, so the plume rose only to about 3,000 feet and spread at that level over a very large area. Numerous residents of East Palestine, and as far south as West Virginia, reported a black dust deposit on their cars, patios, and grounds from the fallout. This material was never tested for the large spectrum of highly hazardous chemicals generated by the derailment fires.

Q3: How does the amount of contamination compare to regulatory limits, health limits and or background rates?

Carson: “A number of agencies have looked at the levels that were found and compared them to their published regulatory limits...The Ohio EPA tested ground water and showed no contaminations at all. The USEPA also did air tests and soil tests at various distances from the derailment site and found that levels were very low. Although they were detectable, they were very low and in the range of, or less than, background levels for those materials.”

My Response: These comments do not reflect the unprecedented nature of this East Palestine disaster. Historically and legally, chemical exposure causation is based upon identifying a single chemical that produces the alleged medical symptoms and comparing the measured exposure level to government regulatory limits. In this East Palestine case, the plume of derailment fire emissions contained hundreds of chemicals, many of which individually produce the same medical injuries – cancer, respiratory irritation/corrosion, individual organ toxicity, neurological symptoms, etc. It is meaningless to say an individual chemical is at a low, “safe,” level when exposure from this fire may be to 20 similarly toxic chemicals that produce the same injury. For example, the fire plume at East Palestine (Figure 1) contained at least 10 chemicals that each produce irritation of the skin/eyes/nose/throat/lungs, 6 chemicals that are known to cause nasopharyngeal cancer, 7 chemicals known to cause lung cancer, etc. If one of these chemicals does not exceed its governmental level, it does not mean the combination of chemicals producing that specific toxicity will not cause that illness. This disaster at East Palestine is not only unprecedented because of its emissions complexity, but it is also unprecedented in the geographical area encompassed. In addition, East Palestine residents have experienced at least four different chemical exposure/releases (Fire #1, Fire #2, track soil remediation, stream bank remediation).

Q4: How does the level of contamination compare to similar communities?

Carson: “Levels found in East Palestine were similar to those found in Columbiana because the industrial activity that has occurred in northeast Ohio over many decades has spread a number of chemicals around the environment, so they are present there all the time. But the derailment itself has not contributed to a significant increase of those chemicals in East Palestine.”

My Response: This attempted distraction to “industrial activity” is not only unsound, but it is noncontributory towards defining an honest and meaningful Consent Decree. The train derailment and fire in East Palestine involved many chemicals that are not historic to northeast Ohio. Do both Columbiana and East Palestine have historically equivalent vinyl chloride “hotspots” from previous “industrial activity over many decades?” How about the dioxin levels detected in East Palestine? Are they also “present [in Columbiana] all the time? The forever chemicals identified in East Palestine are not from historic industrial activity, but may remain in the community forever. The serious nature of this minimizing and distracting opinion undermines the serious dangers that are resulting from the train derailment and fires.

Q5: Were there carcinogens release?

Carson: “Some of the chemicals that were released are known to be associated with cancer. In particular, vinyl chloride is known to be a human liver carcinogen. The levels people in East Palestine

were exposed to were so small that I don't expect any kind of cancer, or any other health effects, to have resulted from this.

My Response: This misleading statement ignores the fact that there were 7 other chemical carcinogens in the railcars (i.e., EGMB. petroleum lube oil, fuel additives, benzene, paraffin wax, & hydraulic cement). There was also no mention that the fires released over 119 chemicals known to cause cancer in 21 different organs or organ systems of the body and dozens of other chemicals released by the fires promote cancer development. At least two East Palestine residents have already been diagnosed with cancer - one man with cancer of the breast, and one man with two tumors/cancers in his brain. The rapid development of these cancers can readily be attributed to the carcinogens released by the fires along with the cancer promoting chemicals.

Q6: What are the health impacts associated with chemicals from the derailment?

Carson: “Based upon my best judgment, there will not be any long-term health impacts of chemical exposure from the derailment to members of East Palestine.”

My Response: This simplistic statement ignores the actual deaths of over 43,000 fish in East Palestine streams, AND chickens, foxes, and cats within the first week or so after the derailment. It also does not account for the 95 reported medical symptoms reported by residents of East Palestine and surrounding communities, nor the family in Canada near Niagara Falls that experienced the same irritation symptoms as East Palestine residents during the week the fires were burning and plume dispersion showed the cloud traversed southern Canada. It also does not account for the two cases of cancer already diagnosed in East Palestine, nor the illnesses still being experienced by residents and visitors 18 months after the catastrophe.

Q7: How much higher would contamination levels have to be in order to be at a dangerous level?

Carson: “The amount of contamination that would be associated with measurable health effects would depend upon the individual chemicals and to some extent on the characteristics of exposure. I can tell you that the chemical contaminations that have been clearly associated with health effects in communities have been hundreds of times greater than the measured levels that we are now finding in East Palestine.”

My Response: This reasoning of one-chemical-one-effect does NOT apply to the complex apocalypse that occurred in East Palestine, as previously stated. In my 55 years of experience, I know of no other incident where 8,500,000 pounds of diverse, hot chemicals were released as a “chemical stew” over a community and dispersed over a massive geographic area like occurred in East Palestine. This is unprecedented and is so complex that historic procedures for adequately performing a credible exposure hazard analysis and justly rendering legal decisions are the basis for creating inspired new methods and procedures. Causation in hazard analyses and legal judgments must both abandon the one-chemical-one-effect presumption and accommodate methods and procedure, criteria and definitions that will fairly and logically provide a defensible basis to evaluate highly complex mixture exposure assessments as well as fair and just legal decisions. In this case, the Court needs to give substantially more time for these creative demands to be rendered.

Q8: What are the chances of someone developing an illness like cancer in the future because of this chemical exposure?

Carson: “Because there’s some small levels of chemicals that evolved, the risk due to those chemical exposures is not zero either, but it is very small. It is much, much smaller than 1%. I would personally not expect one person to develop cancer as a result of the exposure to the chemicals in East Palestine. We know that there are lots of things people are exposed to all the time that are more likely to cause cancer and so the result of the exposure to chemicals from the train derailment is much less of a risk than those other exposures.”

My Response: This opinion is belied by the fact that two men in East Palestine have already developed unique cancers in just 18 months after the derailment and fires. Coincidentally I guess, the train released 8 chemical carcinogens and the fires released another 119 chemicals known to cause cancer, as well as numerous other chemicals that promote the development of cancer. Were the early EPA detection results of dioxins buried from public view until recently presented to the Court? FYI, dioxins are known to cause cancer of the breast, pancreas and colon, and the first breast cancer in a man identified in an East Palestine resident that lived very near Ground Zero. As previously stated (see #3 Above), the large number of fire released chemicals that each cause a specific organ cancer greatly increases the risk that a cancer can develop in that organ – toxic effects are often additive.

Q9: How will levels of chemical contamination increase or decrease over time?

Carson: “Any chemical distribute around the community will decrease over time...levels will continue to decrease over time...they will never get more than now.”

My Response: A number of the chemicals released by the fires are “forever” chemicals – they disappear very slowly from the environment and linger long in our body fat once absorbed by inhalation, from drinking water, or from contaminated food consumption. Long-standing environmental depositions in East Palestine have been discovered in railroad beds, stream banks, and stream sediments. Special remediation is required to remove the sources of toxic chemicals.

Q10: How would you respond to claims it’s too early to know the long-term health effects of the derailment?

Carson: “Yes, it is too early for some things, but it’s not too early to predict the overall health effects that will occur from this. Certainly, if we’re thinking of one potential cancer that occurs 20 years from now, it’s too soon to count that, but we pretty well know what exposures resulted from this train derailment, and we can pretty well predict that people will be safe in the long term.”

My Response: There are two major errors in this statement. First, many of the chemicals released by the fire were not tested for in the air, water, soil, homes, and public areas, even when requested. In some cases, sampling protocols and analytical procedures were not credible. This leaves a huge gap in confidence for residents that have been suffering health effects, but do not know what they were exposed to, and are told that there is no pollution in their environment. Second, with hundreds of chemicals released in the massive, week-long plume, prediction of future health effects from potentially hundreds of chemical exposures is uncertain at best, and misleading at worst.

SIGNED UNDER THE PAINS AND PENALTIES OF PERJURY THIS 13th DAY OF AUGUST, 2024.

/s/ George R. Thompson

GEORGE THOMPSON, Ph.D.
President/CEO
Chemical Compliance Systems, Inc.