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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA, WESTERN DIVISION

AMERICA UNITES FOR KIDS, and PUBLIC EMPLOYEES FOR ENVIRONMENTAL RESPONSIBILITY,

Plaintiffs,

vs.

BEN DRATI, et al.

Defendants.

Case No. 2:15-CV-02124-PA-AJW

The Hon. Percy Anderson

SECOND EXPERT DECLARATION OF DR. DAVID O. CARPENTER IN OPPOSITION TO DEFENDANTS' MOTION FOR INDICATIVE RULING

Judge: Hon. Percy Anderson
Date: December 17, 2018
Time: 1:30 p.m.
Crtrm.: 9A

Trial Date: None Set

I, David O. Carpenter, M.D., state and declare as follows:

1. I submit this declaration pursuant to 28 U.S.C. § 1746.

2. I previously submitted my Expert Declaration, dated February 20, 2016, in this case and an appended Expert Report, as well as my current C.V., all of which are attached hereto as Exhibit A. Those provide full details on my qualifications. In short, I am a public health physician who serves as Director of the Institute for Health and the Environment, a Collaborating Center of the World Health Organization, as well as Professor of Environmental Health Sciences at the University of Albany's School of Public Health. I had previously served as Director of the Wadsworth Center of the New York State Department of Health, and as Dean of the U. at Albany School of Public Health. I received my medical degree from Harvard Medical School and I have authored more than 435 peer-reviewed publications, 6 books and 50 reviews and book chapters.

3. In my previous Declaration, I set forth the science of PCB risks in detail. I stated that PCB concentrations in air well below the concentrations that have been found in the Malibu Schools add to the body burden of PCBs and increase the risk of several diseases including cancer and of neurobehavioral and endocrine disrupting effects in exposed people. I also found that the health effects of PCBs at the Malibu Schools are more than theoretical. There was a thyroid cancer cluster at the Malibu Schools, a disease with strong association with PCBs. I stand by my opinions in that earlier Declaration and Report.

4. In preparation for this Second Declaration, I read the Declarations of Douglas Daugherty, dated October 31, 2018, and Carey Upton, dated November 16, 2018, which the Santa Monica-Malibu Unified School

District (the "District") submitted and I conducted some additional independent research. I am familiar with the matters Daugherty and Upton have raised and the proposals they make in terms of their potential health impacts on the students, teachers, staff and other people who enter the Malibu Schools at issue.

5. There is a major flaw in all of the PCB analyses that has been done at the site which has resulted in a serious underestimate of PCB concentrations and therefore underestimates the amount of material that contains PCBs in excess of legal limits and also underestimates threats to health. All the District's analyses have used methods where the reporting has been of Aroclor concentrations. Aroclors were the commercial mixtures sold by Monsanto. PCBs are chemicals that vary based on the numbers of chlorines and where they are located around the biphenyl core. Individual PCBs are called congeners. The commercial mixtures were sold based on the average weight of chlorines. Thus, Aroclor 1221 was 21% chlorine by weight, while Aroclor 1260 was 60% chlorine by weight. When PCB analyses are reported as Aroclors, the levels of several (usually five or six) congeners are examined which are characteristic of that product and the concentration of total PCBs is determined based on the assumption that the levels of these peaks show the presence of that particular mixture. However, PCBs in the environment become "weathered" over time and do not maintain the congener profile of the original commercial mixture. The less chlorinated congeners are more volatile and more water soluble. Thus, they selectively concentrate in air and water and become depleted in caulk and masonry. As a consequence, in aged samples, Aroclor analysis will underestimate the actual PCB concentration in every sample, including solid material, wipes

and especially air. The level of under-estimation will be much greater in air samples because of the selective volatilization of the lower chlorinated congeners.

6. Figure 1 (at the end of this Declaration; from Carpenter, 2015) shows the pattern of congeners that volatilize when air is blown over pure Aroclor 1260. It is obvious that what actually appears in the air does not match any one commercial mixture and would be totally missed unless a congener-specific method of analysis was used.

7. Figure 1 reveals that the pattern in air does not reflect Aroclor 1260, nor does it reflect the pattern of any other commercial mixture. Congeners appear in high concentrations that are not even obvious in the commercial mixtures. If and when this pattern of PCBs in air was reported as an Aroclor analysis, the results would be reported as "non-detect" (ND), when in fact the levels are high. The degree of error will be much greater for air samples than in wipes or caulk samples. The PCBs in air come from the high concentrations of PCBs in caulk and wipes. However, it is the PCBs in air that pose the greatest risk to the health of the occupants of the school, and those reported by the District are essentially worthless because of the analytical methods used. Air samples must report complete congener profiles to be at all credible.

8. This completely undermines the District's claims that their air samples demonstrate that the conditions at the Malibu Schools are "safe" for teachers and students, and it means that the claim that the majority of caulk samples

taken since the Court's Judgment are below the legal limit has not been proven.

9. The School District was the Defendant in the original case and was ordered by the Court to not allow students, teachers, administrators and staff to be in the building "unless all window and door systems and surrounding caulk at any such location has been replaced". The goal was to remove all PCBs at concentrations greater than 50 ppm. While progress has been made, this requirement has clearly not been met. Allowing exposure to human occupants of the building for another five years is simply not acceptable, in my medical opinion. Even based on the District's faulty testing methodology, explained above, levels of PCBs as high as 239,000 ppm – 4,780 times the legal limit --were found in the large air vent outside of room 206 in Building D last January! (This and many other high results are contained in a report attached hereto as Exhibit B, which are the narrative first ten pages of the: *PCB DELINEATION AND SOURCE BULK SAMPLING REPORT* Malibu High School Building D, which was prepared in final for the District by Alta Environmental, dated May 1, 2018.)The District uses terms such as "preliminary waste characterization sampling" and "representative bulk sampling" to describe the sampling done to date. Many sites have not been sampled, and a significant number of those that have been sampled contain more than 50 ppm PCBs. Clearly "representative" sampling will never assure that there are no TSCA violations of PCBs concentration in caulk greater than 50 ppm. Because of the clear threat to the health of occupants of the school, this is a totally unacceptable plan. The District's argument for granting an extension concerns only the expenditure of public funds. The reason why this is

unacceptable from a public health perspective is that the continued occupancy poses serious risk to the health of students, teachers, administrators and staff.

10. Another very important consideration is whether the non-regulatory variable guidance levels for PCBs in air established by EPA are adequately health-protective, even assuming they were met, which has not been shown given the District's faulty testing methodology discussed above. There is every reason to believe that the air guidance levels are not health-protective, based on research results from my group and that of other scientists. Even the regulatory 50 ppm standard for solids and, the 1 $\mu g/100\ cm^2$ standard for wipes were never based on hard data, but rather chosen arbitrarily as good-faith levels that were assumed to be obtainable standards. There is no evidence that there is a threshold between "safe" and "unsafe" levels of PCBs. This is particularly true for PCBs in air, since everyone must breathe all of the time, and cannot escape exposure if there are PCBs in the air. While persons can avoid touching contaminated caulk, they cannot avoid contaminated air and have limited ability to avoid contaminated surfaces.

11. As support for this point, my colleagues and I have studied the health of a Native American group (Mohawks) that live along the St. Lawrence River which has been contaminated with PCBs from aluminum foundries. We have documented elevations in type 2 diabetes (Aminov et al., 2016) and menstrual irregularities (Gallo et al., 2016; 2018) that are associated with exposure to the lower chlorinated congeners through inhalation of contaminated outdoor air. The Mohawks have established an air standard of 5 ng/m^3, much lower that the EPA advisory for the youngest children of 100

ng/m^3. We have measured air concentrations of PCBs at the Reservation, and the highest level we have recorded was slightly less than 20 ng/m^3. Clearly this and even lower levels than this were associated with elevations in disease in this population.

12. In the present circumstance, not only were the wrong analytical methods used for measuring PCBs in air samples in the school (reporting results as Aroclors rather than total PCB congeners), but also the detection limit for air samples is given as 70 ng/m^3. This is a concentration far above the levels known to cause human disease even if the method used did actually monitor concentrations accurately, which it does not.

13. There clearly remain elevated and dangerous levels of PCBs in the buildings, and these buildings should not be occupied until the PCBs have been removed. There are measured concentrations exceeding 50 ppm. The statement by Dr. Daugherty, in his Declaration at page 32, par. 64, that "These results suggest that the majority of remaining window and door systems in pre-1979 building at the Malibu Campus likely contain concentrations of PCBS <50 ppm threshold pursuant to TSCA" is not acceptable in my expert opinion because the data show a significant number of samples that exceed the EPA value of 50 ppm. The existing Court order requires that the District will not use "any office, classroom, or other structure at Juan Cabrillo Elementary School ("JCES") facility not be occupied after December 31, 2019 "unless all window and door systems and surrounding caulk at any location has been replaced". There are clear existing sites with concentrations >50 ppm, as stated in the Daugherty Declaration, at page 32, par. 63, and elsewhere in the records. Even more

legal violations could appear if correct testing methods were used. Furthermore, PCBs in excess of 50 ppm have been found in other places than just windows and doors, including the flooring in Building D and other pre-1979 buildings. It is presently not even certain that under the bond measure passed by the voters that the Malibu school facilities will be demolished, and therefore some of these illegal levels of PCBs could remain even after six years when the District claims its reconstruction activities will likely be completed. Mr. Upton states, in his Declaration at page 3, par. 3 (my emphasis): "The passage of Measure M will likely result in the demotion and redevelopment of the Malibu Campus". The District's Motion, Dkt. 317 at 13, states that the Board of Education may "elect[s] to approve a new development plan that retains one or more pre-1979 buildings at the Malibu Campus after December 31, 2024...".

14. Given that there remain concentrations of PCBs that clearly pose threats to human health, and that the ultimate demolition of the facility is still uncertain, it is totally unacceptable from the health perspective to extend the allowed period of occupancy for an additional five years or even longer.

15. The School District and the Daugherty Declaration appear to be focused primarily on meeting the minimal EPA standards, primarily the 50 ppm levels in caulk. While progress has clearly been made, that goal has not been achieved to date, and the facility remains dangerous for occupancy. The concerns of the District should be focused on the health of students, teachers, administrators and staff. This is totally missing from Mr. Daugherty's Declaration. The greatest concern is clearly air level concentrations of PCBs. These come from multiple sources, including

caulk, flooring materials, possibly paint and other sources, and no air samples have been appropriately determined.

16. The statement by Mr. Upton, in his Declaration at page 3, par. 4, that "managing these polychlorinated biphenyl ("PCBs") to remain in place beyond the current December 31, 2019 deadline....will not pose an unreasonable risk of injury to human health or the environments" is simply untrue. As long as there are elevated levels of PCBs in the complex there remains an unacceptable risk to human health.

17. In summary it is my opinion, based on solid scientific evidence from my own research and that of others, that there are significant threats to the health of all persons, especially students, who occupy rooms within the Malibu school facilities that contain high levels of PCBs, and that extending that exposure for an additional five years is not acceptable.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 30th day of November 2018, at Rensselaer, New York.

David O. Carpenter, M.D.

Figure 1.

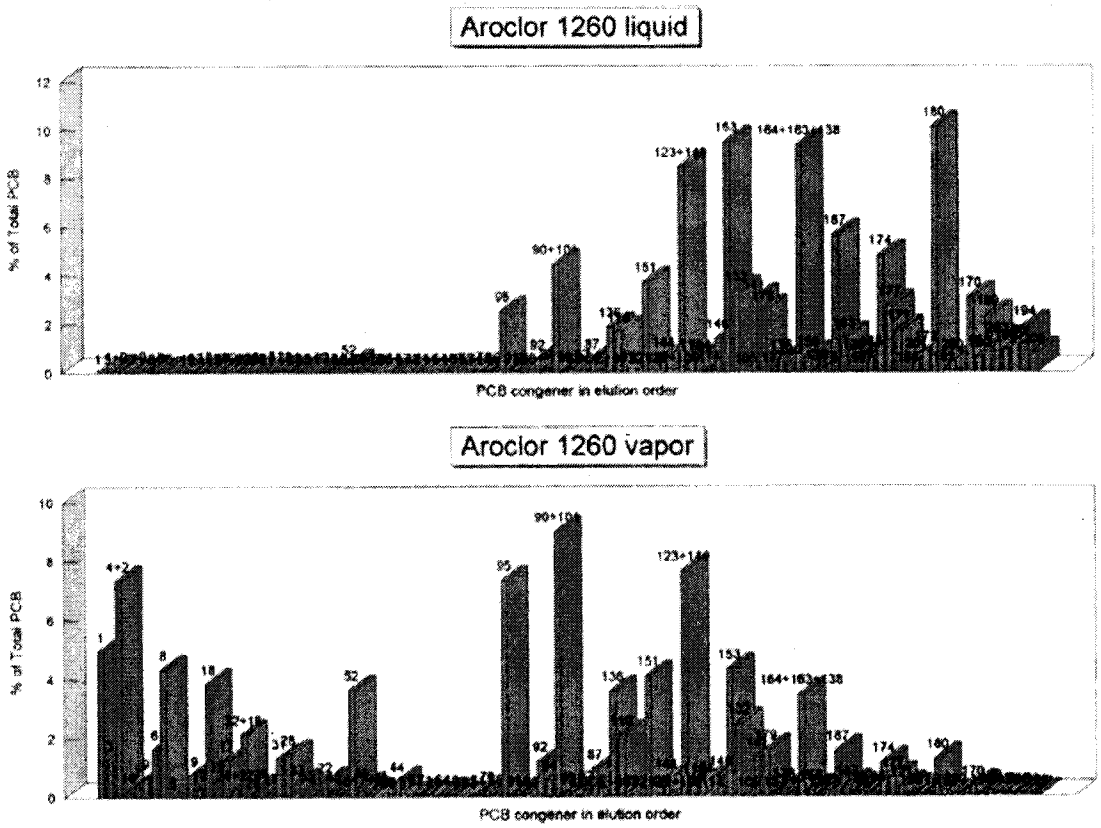

Figure 2: The congener patterns in Aroclor 1260 liquid (top) and the congener pattern seen when passing air over the liquid and collecting and analyzing the vapor-phase PCBs.
Peaks are shown in the order they elute from the column. The numbers above the peaks identify individual congeners or groups of congeners. Those peaks to the left have fewer chlorines.

References:

Aminov Z, Haase R, Rej R, Schymura MJ, Santiago-Rivera A, Morse G, DeCaprio A et al. (2016) Diabetes prevalence in relation to serum concentrations of polychlorinated biphenyl (PCB) congener groups and three chlorinated pesticides in a Native American population. *Environ Health Perspect* 124:1376-1383.

Carpenter DO (2015) Exposure to and health effect of volatile PCBs. *Rev Environ Health* 30:81-92.

Gallo MV, Ravenscroft J, Carpenter DO, Frye CA, Akwesasne Task Force on the Environment, Cook B and Schell LM (2016) Endocrine disrupting chemicals and ovulation. Is there a relationship? *Environ Res* 151:410-418.

Gallo MV, Ravenscroft J, Carpenter DO, Scshell LM and the Akesasne Task Force on the environment (2018) Persistent organic pollutants as predictors of increased FSH-LH ratio in naturally cycling, reproductive age women. Environ Res 164: 556-564.