

**Testimony of  
MIRANDA MASSIE and DAVE PALMER  
on behalf of  
NEW YORK LAWYERS FOR THE PUBLIC INTEREST  
before the  
NEW YORK CITY COUNCIL ENVIRONMENTAL PROTECTION,  
INVESTIGATIONS AND EDUCATION COMMITTEES  
Joint Oversight Hearing on  
PCBs IN OUR SCHOOLS  
April 29, 2008**

Good afternoon Chairpersons Gennaro, Gioia and Jackson, and other members of the Environmental Protection, Investigations and Education Committees. Thank you for the opportunity to provide testimony today. My name is Dave Palmer, and I am a Staff Attorney with New York Lawyers for the Public Interest (NYLPI). With me is Miranda Massie, a Senior Staff Attorney at NYLPI. NYLPI is a nonprofit civil rights law firm formed in 1976 to address the unmet legal needs of New Yorkers. In 1991, NYLPI formed its Environmental Justice & Community Development Project to represent communities facing disproportionate environmental burdens.

As you know, our organization represents a number of community groups facing issues related to the siting of schools on contaminated properties around New York City. Given this work, we have received a number of calls from parents, teachers and community-based organizations concerned about the presence of PCB-contaminated caulking in public schools. On behalf of these concerned individuals and organizations, we've begun to research some of the exposure risks that may be associated with the presence of PCB-contaminated caulking in schools, the health outcomes related to actual exposure, the gaps in information that has been made available by the involved agencies and the pertinent legal avenues for addressing the PCB concern, if needed. Below, Miranda will present some of what we have learned.

First and foremost, as with all of our toxic schools work, we hope to see a precautionary approach taken by the responsible agencies, with an eye towards protecting children's health. We thank the City Council for its leadership in seeking to address this issue, and hope you will continue to play an active role in overseeing the response to this serious concern. Ms. Massie will now provide our detailed testimony.

Good afternoon. Again, my name is Miranda Massie. On behalf of New York Lawyers for the Public Interest, I join Mr. Palmer in thanking the Council and in particular Council Members Gennaro, Gioia, and Jackson. We are grateful that you have convened a hearing on this urgent question of public health and environmental justice and that you have invited us to testify.

In what follows, I will first address the state of the law. Second, I will try to convey a sense of the accumulating scientific evidence on the risks to health posed by PCBs, including where exposure levels are low. And finally, I will call on the Departments of Education and Health and the Environmental Protection Agency to respond to this situation in a manner that puts the well-being of teachers, staff, and above all students first.

Before I start, let me say that we will be happy to provide copies of the relevant statutory and regulatory language and of the scientific studies I will be mentioning if that information would be useful.

## **Introduction**

PCBs were added to caulk starting in the 1950's to increase its elasticity. Subsequently, as will be addressed further below, PCBs were found to be a potent, persistent, bioaccumulating toxin linked to cancer and to damage to the reproductive, neurological, endocrine, and immune systems, and were banned. Beginning in the 1990s, European studies identified PCBs in caulk as a previously unrecognized potential source of risk to human health (the main applications of PCBs had been not in construction but in electrical equipment). Studies showed that PCBs in intact caulk traveled to indoor air and dust, to adjoining masonry, and to outdoor soil.

Beginning in the early 2000s, more scientific and public attention has been directed at this issue in the United States, in part due to large-scale remediation projects at a University of Massachusetts campus and at the University of Rhode Island when caulk on those campuses was found to be contaminated with PCBs. Now the issue has come to a head in New York State, not just here in the City following the Daily News investigation, but also in Yorktown, where the School District remediated PCB-contaminated caulk and has now sued the sole manufacturer of PCBs in the US to recoup the cost of having cleaned up.

## **LEGAL FRAMEWORK**

### **1. The unlawfulness of PCBs in caulk**

It is important to state clearly that the pertinent legal question raised by published scientific studies of caulk and by the independent lab tests commissioned by the Daily News is whether the caulk itself is contaminated with PCBs. At schools built or

renovated when PCB-containing caulk was in use, the caulk may be contaminated and must itself be tested by the School Construction Authority to ensure compliance with federal law. Air tests and wipe tests can provide us with useful information but they are not a substitute for direct analysis of the potential source of contamination.

The presence of PCBs in caulk violates the Toxic Substances Control Act, 15 USC §§2601 *et seq.* (“TSCA”) and the Environmental Protection Agency regulations implementing TSCA, 40 CFR §§761.1 *et seq.* (“the PCB regulations”).

TSCA, enacted in 1976, gives the EPA broad regulatory authority over potentially hazardous chemicals. While Congress generally delegated decision-making on toxins to the EPA in TSCA, it explicitly banned PCBs, subject to exceptions, in §2605(e). Congress also directed the EPA quickly to promulgate rules for the management, disposal, and labeling of PCBs, which the EPA did in the PCB regulations.

Under TSCA §2605(e)(2)(A), as of January 1978, “no person may... use *any* polychlorinated biphenyl in *any* manner other than in a totally enclosed manner” (emphases added). A “totally enclosed manner” is defined in the PCB regulations at 40 CFR § 761.20 as “a manner which results in no exposure to humans or the environment to PCBs.”<sup>1</sup> The caulk in New York’s schools is clearly not “totally enclosed” under the PCB regulations.

TSCA and the PCB regulations provide for additional lawful uses of PCBs, i.e., lawful uses of PCBs in a non-totally enclosed manner. Congress authorized the EPA to specify these additional authorized uses in TSCA at §§2605(e)(2)(B) and (3)(B). The EPA did so in the PCB regulations at §§761.30 *et seq.* These specifically enumerated authorized uses have no bearing on caulk in any context. The pertinent sections address heavy industrial uses of PCBs in transformers, electromagnets, heat transfer systems, etc.

Under the EPA’s strict regulatory scheme, any PCBs in the caulk in New York City schools are (1) not totally enclosed and (2) not otherwise authorized; therefore, their presence is unlawful. If the results obtained in the tests conducted by Northeast Analytical Laboratory at the request of the Daily News are accurate, some city schools have PCB-containing caulk and are in violation of the law. These violations could subject the Board of Education to fines of up to \$27,500 per school per day under TSCA §2615; enforcement action by the EPA under § 2616; and citizen lawsuits under TSCA §2619.

## **2. PCB levels over 50 parts per million**

As we have seen, any level of PCBs in the caulk violates TSCA.

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<sup>1</sup> The full text of the definition reads as follows: “For purposes of determining which PCB Items are totally enclosed... the Administrator... finds that a totally enclosed manner is a manner which results in no exposure to humans or the environment to PCBs. The following activities are considered totally enclosed: distribution in commerce of intact, nonleaking electrical equipment such as transformers (including transformers used in railway locomotives and self-propelled cars), capacitors, electromagnets, voltage regulators, switches (including sectionalizers and motor starters), circuit breakers, reclosers, and cable that contain PCBs at any concentration and processing and distribution in commerce of PCB Equipment containing an intact, nonleaking PCB Capacitor.” 40 CFR § 761.20

However, the EPA regulations also refer specifically to PCB levels at or above 50 parts per million (ppm). These specific references bear on the matter before the Council because Northeast Analytical found caulk containing over 50 ppm PCBs at 6 of 9 schools tested in the Daily News investigation. The EPA has found that such levels, *regardless of circumstances*, “present an unreasonable risk of injury to health within the United States,” 40 CFR §761.20.

The reasons for this finding are described as follows:

...the well-documented human health and environmental hazard of PCB exposure, the high probability of human and environmental exposure to PCBs and PCB Items from manufacturing, processing, and distribution activities...and the evidence that contamination of the environment by PCBs is spread far beyond the areas where they are used. *Ibid.*

Further, when a material or item containing levels at or above 50 ppm is to be disposed of, it constitutes “PCB bulk product waste”, i.e., toxic waste. *See* 40 CFR §761.3.

That said, it bears repetition that no level of PCBs is considered *a priori* safe:

...*any* exposure of human beings or the environment to PCBs, as measured or detected by any scientifically acceptable analytical method, may be significant, depending on such factors as the quantity of PCBs involved in the exposure, the likelihood of exposure to humans and the environment, and the effect of exposure. 40 CFR §761.20. (Emphasis added)

The reason Congress banned PCBs and the reason the EPA enacted such strict regulations, refusing to designate any level of contamination as safe, is the degree of toxicity of PCBs. Now I will turn to the body of scientific evidence on that question.

## **THE SCIENTIFIC EVIDENCE**

First, a caution: there is no study exactly on point documenting the effects on children of the degree and manner of PCB exposure at issue here. However, even though research on PCBs has not yet connected all the dots, it is not hard to tell what the picture is going to be. Again, there is no safe level of exposure to PCBs, and while we currently cannot calculate precisely the severity of the risk posed to children by PCBs in caulk, the evidence supports substantial efforts to reduce levels of exposure as much as is feasible.

Below is a non-exhaustive list of findings published in scientific journals supporting that conclusion. To be clear, there are also studies that failed to find relevant relationships (such as between environmental levels of PCBs and blood serum levels of PCBs). Sometimes the measuring methods are too blunt to capture what is essentially a probabilistic impact. Beyond that, both independent experts and the EPA caution that negative test outcomes must be regarded as inconclusive given the impossibility of isolating the effects of PCBs from the effects of other environmental factors on human subjects.

In overall terms, the impact of PCBs on health is extremely destructive. PCBs cause cancer in animals and have been designated a probable human carcinogen as well. PCBs are neurotoxins and immunotoxins. They disrupt endocrine and reproductive function. Their prenatal impact is severe and it is uncontroversial that they have more acute impacts on children than adults, i.e. that they are a developmental toxin.

A number of relatively recent studies have examined the impact on health of low levels of exposure to PCBs.

- Background (non-acute) exposure to PCBs just after birth had probable health impacts on Dutch children that persisted for years (more infectious diseases; consequently and ironically, fewer allergies) (Hooijkaas 2000).
- Prenatal exposure to environmental (non-acute) levels of PCBs appeared to create developmentally significant sex steroid hormone effects to the point where degree of exposure was associated with sex-role differences in childhood play (Weisglas-Kuperus 2002).
- Chronic exposure of adults in a workplace to low levels of PCB air contamination was associated in a small sample with negative neuropsychological outcomes including attentional attenuation measured both subjectively and objectively (Peper 2005).
- Low level environmental exposure of children to PCBs correlates strongly with IgM levels. (IgM is an antibody the presence of which indicates infection.) PCBs, other organochlorine compounds, and lead appear to have immunomodulating effects on children at low levels of exposure. The study focused on three regions with different degrees of major agricultural and industrial uses and destruction of the target chemicals. Note that increased blood levels of PCBs correlated with proximity to a toxic waste incinerator (Karmaus 2005).
- An increase in prenatal PCB exposure from the 10<sup>th</sup> to the 90<sup>th</sup> percentile (in the Czech Republic from 2002 through 2004) was associated with a 7% reduction in thymus size at birth. (For babies of smokers versus non-smokers, there was a 3% reduction in thymus size.) The thymus is important for immune function, in particular for the development of T cells. Note developmental connections between immune and nervous systems and possible implications for neuro-behavioral disorders. This study includes a brief summary of work on PCBs as an immunotoxin and the effects of prenatal effects of PCBs (Hertz-Picciotto 2008).
- Exposure to PCBs in girlhood appears to increase women's PCB body burden during pregnancy (Glynn 2007).

Recent studies have also documented the relationships between PCBs in caulk and other construction materials; PCB levels in interior air and dust; and PCB blood levels of residents, employees, and students.

- Wood floor finish containing PCBs was associated with elevated PCB levels in (1) household air and dust and (2) residents' blood (Rudel 2008). A quotation from Rudel 2008:
- Apartment buildings containing PCB caulk have higher indoor air levels of PCBs; residents' blood serum levels of PCBs were significantly higher than those of the control group (Johansson 2003).
- Students attending a school with PCB air contamination have clearly elevated blood serum levels of lower-chlorinated PCBs than students in a non-contaminated school. Blood concentrations increase with the number of years spent attending the school with air contamination (Liebl 2003).
- That PCB-contaminated caulk causes indoor PCB air contamination has been documented for a long time (e.g. Burkhardt 1990).

Finally, contamination of adjoining masonry and soil by PCB-containing caulk has been established by numerous studies (e.g., Herrick 2007, Ljung 2002).

In sum, while science has yet to answer many questions about the impact of contaminated caulk in schools on children's health, the developing evidence provides at minimum a strong basis in reason for serious concern. That assessment frames our policy recommendations, to which I now turn.

## **POLICY RECOMMENDATION**

We believe that prioritizing the health of the children and adults in NYC schools requires testing the caulk in schools built or renovated between the mid-1950s and the late 1970s. Wipe tests and air tests are no substitute for testing the caulk itself and do not address the basic issue before the Council.

Where tests reveal PCB contamination, the caulk should be replaced, as required by law. Where analysis shows that the caulk contains 50 ppm or more PCBs, the caulk should be replaced as soon as possible. The EPA as well as independent medical, scientific, and hazardous waste experts should be consulted so that a safe plan to remove and replace the caulk can be devised and interim protective measures put in place.

Again, we thank the City Council for its leadership on this urgent issue and for the opportunity to address you.