

To: Susan MacMillan, DEQ liaison to Hazardous Index Technical Advisory Committee, and DEQ/OHA staff

From: Dale Feik, Ed.D.

Re: Typed version of my public comments Nov. 4, 2018 before the Hazardous Index Technical Advisory Committee members, **with additional comments not able to say because of time constraints.**

Date: Nov. 6, 2018

I am Dale Feik, citizen, parent, grandparent of a one-year-old granddaughter and a four-year-old granddaughter who was born underweight at four pounds, two ounces. They live with their parents two blocks southwest from Intel's massive two, three-billion-dollar chip manufacturing facilities in Hillsboro, Oregon.

I organized Hillsboro Air and Water as part of [Portland Clean Air - Hillsboro Air & Water](#).

I have attended Environmental Quality Commission meetings since Sept. 2013 in many different locations in the State, listened to presentations, and networked with DEQ staff and community members. My goal is to reduce the quantity and kinds of toxic air and water emissions from industries. In particular, I encourage all industries, large and small to follow the pre-cautionary principle as defined by Sandra Steingraber in her book/DVD titled Living Downstream, An Ecologist's Personal Investigation of Cancer and the Environment. Dr. Steingraber says:

“When there is a health risk related to environmental issues, reasonable doubt should bring the pre-cautionary principle into play, that is, an activity should not be developed until it has definitely been proven to be harmless.”

Therefore, after thinking about some of the HITAC members comments, I like the language “...are expected to have...”

Rachel Carson in her book Silent Spring deliberately challenged the wisdom of a government that allowed toxic chemicals to be put into the environment before knowing the long-term consequences of their use. We are still suffering the adverse health consequences of DDT!

Steven Gilbert, gave me his business card with the web address to download for free his book titled A Small Dose of Toxicology: www.asmalldoseof.org. I told Steven that I would read it with heightened interest and give him the feedback he asked for. I did that yesterday morning and emailed to him:

“Wow!!! I read thru all of the chapters, skimmed a lot of it but read the Summaries and Recommendations of each one. I am going to share ‘a small dose of... Alcohol, Caffeine, Nicotine, Pesticides, Lead, Mercury, Arsenic, Metals, Solvents, Radiation, Persistent Environmental Contaminants, Endocrine Disruptors, Animal and Plant Toxins, Neurotoxicology, Cancer, Developmental Toxicology, Toxics in the Home, Risk Assessment, and Ethics - with other Toxicologists/scientists I know and other activists who need a good understanding of Toxicology issues. His chapter titled Principles of Toxicology and his Appendix that demonstrates the Principles of Dose/Response is very enlightening. Now I understand why you made certain comments at the HITAC meeting. In two places I noticed that you quoted/referred to Rachael Carson, Silent Spring, whom I quoted Dec 4th.”

I planned to quote a few statements from the article/handout that you provided at the meeting titled 'Bisphenol A & Phthalates & How Environmental Chemicals are Reshaping Toxicology', Nov 28, 2018 - <https://academic.oup.com/toxsci/article/166/2/246/5212891>.

Quotes:

...Historically, toxicity was evaluated using high-dose testing under the assumption of a linear dose response curve, However, this paradigm of 'the dose makes the poison' does not hold for BPA, phthalates, another endocrine disrupting chemicals. The unique properties of BPA and phthalates, including low-dose effects, nonmonotonic dose response curves, and quick metabolism, disobey traditional principles of toxicology. Our journey to understand and incorporate these properties into toxicological methods has triggered a paradigm shift within the field of toxicology"

...the estrogen mimicking properties of BPA were established in the 1930s, but were not considered problematic and were not further investigated until the 1990s after the discovery of nuclear hormone receptors...

...the tendency of phthalates to migrate out of plastics into the environment was first observed in 19790, whereas for BPA this discovery did not occur until the 1990s...

...low-dose effects, defined as effects present at or below the levels of average human exposure, are often accompanied by MDRCs, in which the slope of the dose-response curve changes sign - newer concept in toxicology.

..timing of exposure is even more critical than dose. Pre- and perinatal exposure can contribute to lifelong disease outcomes that adult toxicity testing cannot predict...

...effective collaboration between risk assessors, government researchers, and academic researchers will be key to properly assessing the low-dose toxicity of future chemical products...

Conclusion after reading article and free book

After spending some hours reading Dr. Steven Gilbert's free book titled a low dose of toxicology, I now realize I need to study his book and publications.

Synergistic/Confounding Impacts of Chemicals

Fred Marsh, former research chemist of Los Alamos Laboratories, who became involved in the toxic emissions from Intel's manufacturing plant emailed me the following as a published, peer- reviewed chemist with many patents, wrote:

"... as a chemist, I recognized long ago that:

(1) A majority of the chemicals Intel is allowed to release in New Mexico (and Oregon) have never been studied to establish safe exposure limits.

(2) Even when safe exposure limits have been determined, these are for a workplace where protective gear and quick-response teams are available for overexposure, unlike Intel's neighbors. Moreover, these "safe" limits are for no more than an 8-hour work day, whereas Intel neighbors can be exposed 24 hours a day every day of the year.

(3) Even those chemicals that have been studied, at best, results in safe exposure limits for single chemicals, whereas Intel's toxic emissions (based on our FTIR measurements in New Mexico) are always multi-component mixtures. The few studies that have been done demonstrate that the toxicity of synergistic mixtures can greatly exceed the sum of the individual components. In fact, one published study revealed that the toxicity of a simple two-component mixture was 1600 times greater than the sum of the two individual chemicals.

When one considers the possible combinations of the nearly 100 chemicals Intel is allowed to release, and the possible proportions of components within such mixtures, there are far too many combinations that could possibly be studied. Instead, I have often said Intel's near neighbors are serving as guinea pigs for toxicity studies that have not, will not, and often cannot, be done.

Summary of this Email

Therefore, please implement the pre-cautionary principle as rigorously as possible in your decision making.

Sincerely,

Dale Feik, Ed.D.

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Cc: 1. Ali Mirzakhali, DEQ Air Administrator
2. Keith Andersen, DEQ Cleaner Air Oregon administrator
3. Gabriela Goldfarb, OHA Section Manager, Public Health Division
4. David Farrer, OHA Toxicologist
5. Fred Marsh, former Los Alamos Research Chemist and former member of New Mexico's Community Environmental Working Group, <http://www.cewg.org/>

Note:

I am forwarding this email separately/individually to some of the HITAC members who gave me their email addresses and who I conversed with during the breaks. Those members are:

1. John Vandenberg, Ph.D. EPA, Director, NCEA/RTP, NC
2. Steven G. Gilbert, PhD, DABT, Director of Institute of Neurotoxicology and Neurological Disorders, and affiliate professor at University of Washington
3. Perry Hystad, PhD, Oregon State University
4. Neeraja Erraguntla, Ph.D., DABT, Director of Chemical Products & Technology Division of American Chemistry Council