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January 14, 2015

The Honorable David Deen, *Chair*  
House Committee on Fish, Wildlife and Water Resources  
Vermont State House  
Montpelier, VT 05633

CC: Rep. Jim McCullough, *Vice Chair*  
Rep. Steve Beyor, *Ranking Member*  
Rep. Bob Krebs  
Rep. Paul Lefebvre, *Clerk*  
Rep. Amy Sheldon  
Rep. Thomas Terenzini  
Rep. Kate Webb  
Rep. Janssen Willhoit

RE: House Bill 4: An act relating to prohibiting the manufacture or sale of personal care products and over-the-counter drugs containing microbeads

Dear Representative Deen:

On behalf of Seventh Generation, I thank the Committee for this opportunity to testify **in support of H.4**, an act relating to prohibiting the manufacture or sale of personal care products and over-the-counter drugs containing microbeads.

Seventh Generation is the nation's leading brand of household and personal care products designed to help protect human health and the environment. Established in 1988, the Burlington, Vermont based company employs over 130 people, and remains an independent, privately-held company distributing products to natural food stores, supermarkets, mass merchants, and online retailers across the United States and Canada.

Among the products manufactured and sold by Seventh Generation are body and hand soaps, laundry detergents and dish detergents, baby diapers, baby wipes, and feminine hygiene products.

**H.4 is needed to ensure the health and well-being of Vermont's fish, wildlife, water resources and human population.** As noted in the preamble to H.4, and as validated in peer-reviewed scientific research:

- (A) Microbeads are found in over 100 personal care products that are sold in the State
- (B) Municipal wastewater treatment plants do not effectively filter microbeads from water discharged to rivers and lakes in the State



- (C) Fish consumed by humans have been found to have ingested plastic microbeads
- (D) Plastic microbeads and associated toxic chemicals persist in the environment and accumulate in human and other animal tissues.
- (E) There are economically feasible alternatives to plastic microbeads, as indicated by the current use of biodegradable, natural, and abrasive materials in many consumer personal care products.

Microplastics are intentionally added to numerous household cleaners and personal care products as a scrubbing agent (microbeads). Microbeads are almost always washed down consumers' drains as a normal and expected part of use. Manufacturers know and promote this wash-and-rinse practice. However, microbeads often are not removed by conventional sewage treatment and thus reach Vermont's lakes and rivers. Once released to the environment, microbeads form nuclei of collected contaminants and enter the food chain.

In 2012, pollution by microbeads was confirmed in the Laurentian Great Lakes of North America. Multicolored spherical particles less than 1 mm in diameter were compared to two brands of facial cleansers containing polyethylene microbeads and showed similarities in color, composition, size, shape, and texture. In 2014 students at the State University of New York, Plattsburgh, also identified plastic microbeads in the effluent of the Peru and Plattsburgh wastewater treatment plants, assuring contamination of Lake Champlain with these insidious pollutants.

In the marine environment, it is extremely difficult and economically impractical to attempt to remove microbeads. Microplastics are pervasive in aquatic systems, requiring cleanup efforts throughout the water column, which equates to time and expense. Removing microplastics and microbeads from the environment is clearly a case of an ounce of prevention being far greater than a pound of cure.

Microplastics in the environment may have deleterious effects on wildlife. Many kinds of persistent organic pollutants sorb onto plastic, including polychlorinated biphenyls (PCBs), dichlorodiphenyltrichloro-ethane (DDT), and dichlorodiphenyldichloroethylene (DDE), which in some cases impact marine organisms' ability to function and procreate. Microplastic particles have been found to translocate into the gut cavity and digestive tubules of mussels and migrate from prey to predator through ingestion. A study of the sorption of chemicals from plastic into fish tissues during digestion found that polycyclic aromatic hydrocarbons (PAHs), PCBs, and polybrominated diphenyl ethers (PBDEs) had bioaccumulated, resulting in liver damage.

Importantly, microbeads are nonessential. Substances exist that are mineral or biodegradable, perform the same function, and have no meaningful impact on the economics of the products in which they are used. These alternatives to plastic



microbeads include hardened seed kernels, crushed cocoa beans, ground coconut shells, oatmeal, calcium carbonate (chalk), and silica. These alternative materials are natural mineral substances or organic compounds that biodegrade in the environment.

In summary, this proposed legislation is scientifically and economically sound, and would protect Vermonters, Vermont fish, wildlife, lakes, and streams from exposure to plastic microbeads and associated toxic chemicals.

Thank you for your attention to, and consideration of, these comments.

Respectfully submitted,

A handwritten signature in black ink that reads "Martin H. Wolf". The signature is written in a cursive, flowing style.

Martin H. Wolf  
Director, Sustainability & Authenticity