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3M Comments on Draft Priority Consumer Products Draft Report to the Legislature

To Whom it May Concern:

The 3M Company (3M) is providing detailed comments to the Washington Department of Ecology (Ecology) on the Priority Consumer Products Draft Report to the Legislature (Draft Report) under the Pollution Prevention for Healthy People and Puget Sound Act (the Act). RCW 70.365. We support the policy objectives of the Act and Ecology's Safer Products for Washington program and we appreciate the opportunity to participate in this important stakeholder dialogue with Ecology. Our comments on the Draft Report focus on perfluoroalkyl and polyfluoroalkyl substances (PFAS).

As a preliminary matter, 3M wishes to remind Ecology that the vast body of scientific evidence does not show that PFAS causes adverse health effects in humans at current exposure levels, or even at the historically higher levels found in the blood. This has been recently acknowledged by the U.S. federal Agency for Toxic Substances and Disease Registry (ATSDR) and by an Expert Health Panel assembled to advise the Australian federal government. *See* Section III. 3M also wishes to remind Ecology that, as a result of voluntary industry phase-outs, human serum levels of perfluorinated compounds have steadily decreased for years.

Ecology's Draft Report relies on testing of consumer products collected up to 13 years ago, which therefore do not reflect industry phase-outs. Ecology's calculations also selectively rely on a single outlier data point, the basis for which is not properly explained in available literature. It also appears that Ecology does not plan to meet its statutory obligation to consider the availability and feasibility of safer alternatives as part of its analysis. Ecology should carefully reconsider its analysis of carpets and aftermarket carpet treatments and, in so doing, conclude that they should not be identified as priority consumer products.

I. 3M's Voluntary Phase-out and Declining Industry Uses of PFAS

As a science-based company, 3M has substantial experience and expertise with the breadth of issues mentioned in the Department's regulatory record regarding PFAS. As reflected in the Draft Report, the levels of PFOS and PFOA in the blood of the general population in the U.S. have declined sharply, and are expected to continue to decline, in the years after 3M and other manufacturers voluntarily phased these chemicals out of production. *See*

Section II. This is important context for Ecology as it considers how to prioritize its resources in the coming years under the Safer Products for Washington program.

It is also important for Ecology to consider the declining use of PFAS in carpets and the declining need for aftermarket carpet treatment. Per a study cited in the Draft Report, the Stockholm Convention requires Parties to phase out the use of PFOS in carpets by 2015, which contributed to decreased uses worldwide.¹ Additionally, as Ecology recognizes, the nationwide retailers Lowe's (35 retail locations in Washington) and The Home Depot (45 locations in Washington) have phased out PFAS in carpets. The manufacturer Interface has also stopped production of PFAS-containing carpets.² These carpets have permanent built-in stain resistance and will therefore not require aftermarket treatment. Target (36 locations in Washington) has also committed to removing perfluorinated chemicals from textile products by 2022.³ This phase-out will be complete prior to the effective date of any restrictions under the Safer Products for Washington program. See RCW 70.365.050 (setting a target for rules to be adopted by June 1, 2023).

II. Voluntary Phase-Outs Have Led to Decreasing Levels of Perfluorinated Compounds in Human Serum Levels

PFOS serum levels have consistently decreased in the U.S. population for at least 15 years. The Draft Report acknowledges this and notes that it is likely a result of voluntary industry phase-outs. Draft Report at 30. 3M agrees. PFOS serum levels decreased by approximately a factor of six between 1999-2000 and the most recent years for which data is available (2013-14). *Id.* at 5. In addition, 3M proactively started a perfluoroalkyl biomonitoring program with the American Red Cross adult blood donors. The most recent publication, which examined samples collected in 2015, also reported declining trends. Olsen et al. 2017.⁴ As product manufacturers and retailers continue to phase out the use and sale of PFAS-containing products, these trends will continue.

III. The Body of Scientific Evidence Does Not Show Adverse Health Effects in Humans for Perfluoroalkyls

The vast body of scientific evidence does not show that perfluoroalkyls cause adverse health effects in humans. This is true both at historical exposure levels and at current exposure levels, which are much lower after voluntary phase-outs and regulation on the use of these chemicals.

Two authoritative bodies have recently reviewed current research and concurred about the lack of health effects in humans. ATSDR recently concluded regarding perfluoroalkyls:

¹ KEMI, Swedish Chemicals Agency. (2015). Occurrence and use of highly fluorinated substances and alternatives. Available at <https://www.kemi.se/en/global/rapporter/2015/report-7-15-occurrence-and-use-of-highly-fluorinated-substances-and-alternatives.pdf>.

² https://www.interface.com/US/en-US/sustainability/product-transparency/Stain-Resistance-PFAS-en_US.

³ <https://corporate.target.com/media/TargetCorp/csr/pdf/Target-Chemicals-Policy-and-Goals.pdf>.

⁴ Olsen, G.W., Mair, D.C., Lange, C.C., Harrington, L.M., Church, T.R., Goldberg, C.L., Herron, R.M., Hanna, H., Nobiletti, J.B., Rios, J.A., Reagen, W.K., and Ley, C.A. (2017). Per- and polyfluoroalkyl substances (PFAS) in American Red Cross adult blood donors, 2000-2015. *Environ Res.* 157, 87-95.

“The available human studies have identified some potential targets of toxicity; however, cause and effect relationships have not been established for any of the effects, and the effects have not been consistently found in all studies.” ATSDR 2018 Analysis at 635-36 (emphasis added).⁵

The Australian Expert Health Panel concluded in March 2018 that “there is mostly limited or no evidence for any link with human disease from these observed differences. Importantly, there is no current evidence that supports a large impact on a person’s health as a result of high levels of PFAS exposure.” Expert Health Panel for PFAS: Summary at 2 (emphasis added).⁶ The report further stated: “After considering all of the evidence, the Panel’s advice ... is that the evidence does not support any specific health or disease screening or other health interventions for highly exposed groups in Australia, except for research purposes.” *Id* (emphasis added). Like ATSDR, the Australian Expert Health Panel analyzed hundreds of studies when reaching this conclusion. Expert Health Panel for Per- and Poly-Fluoroalkyl Substances (PFAS), March 2018 at 382-403.⁷

IV. **Legal Background**

Ecology must send a final report to the legislature identifying priority consumer products by June 1, 2020. RCW 70.365.050. By statute, this identification process must be “consistent with RCW 70.365.030.” *Id*. That section of the Act requires Ecology, when identifying priority consumer products, to consider each of the following seven criteria “at a minimum:”

- (a) The estimated volume of a priority chemical or priority chemicals added to, used in, or present in the consumer product;
- (b) The estimated volume or number of units of the consumer product sold or present in the state;
- (c) The potential for exposure to priority chemicals by sensitive populations or sensitive species when the consumer product is used, disposed of, or has decomposed;
- (d) The potential for priority chemicals to be found in the outdoor environment, with priority given to surface water, groundwater, marine waters, sediments, and other ecologically sensitive areas, when the consumer product is used, disposed of, or has decomposed;
- (e) If another state or nation has identified or taken regulatory action to restrict or otherwise regulate the priority chemical in the consumer product;
- (f) The availability and feasibility of safer alternatives; and
- (g) Whether the department has already identified the consumer product in a chemical action plan completed under chapter 70.105 RCW as a source of a priority chemical or other reports or information gathered under chapter 70.240, 70.76, 70.95G, 70.280, 70.285, 70.95M, or 70.75A RCW.

⁵ Available at <https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf>.

⁶ Available at [https://www1.health.gov.au/internet/main/publishing.nsf/Content/C9734ED6BE238EC0CA2581BD00052C03/\\$File/summary-panels-findings.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/C9734ED6BE238EC0CA2581BD00052C03/$File/summary-panels-findings.pdf).

⁷ Available at [https://www1.health.gov.au/internet/main/publishing.nsf/Content/C9734ED6BE238EC0CA2581BD00052C03/\\$File/expert-panel-report.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/C9734ED6BE238EC0CA2581BD00052C03/$File/expert-panel-report.pdf).

Id. 70.365.030(2). Additionally, when identifying priority consumer products, Ecology must “notify the public of the selection, including the identification of the peer-reviewed science and other sources of information that the department relied upon [and] the basis for the selection.” *Id.* 70.365.050(4)(a).

V. Comments on Priority Consumer Products Draft Report to the Legislature

a. Ecology is Not On Track to Satisfy its Statutory Obligation to Consider the Availability and Feasibility of Safer Alternatives

The Act requires Ecology, when identifying priority consumer products by June 1, 2020, to consider each of seven criteria. *See* Section IV. This includes “[t]he availability and feasibility of safer alternatives.” *Id.*

Yet Ecology has given every indication it will ignore this statutory requirement. During an August 29, 2019 webinar, Ecology stated in response to a question that “we are not evaluating alternatives in order to identify priority products. The evaluation of alternatives occurs as one of the steps in Phase 3 of this process...” (i.e., between June 1, 2020 and June 1, 2022).⁸ Ecology took this position again in a February 19, 2020 webinar, during which Ecology repeatedly stated in response to questions that the availability and feasibility of safer alternatives would not be considered until after the Draft Report was finalized.⁹ Ecology takes the same position in the Draft Report itself regarding every identified consumer product. *See, e.g.*, Draft Report at 32 (“As part of our Safer Products for Washington process, we will address the safety and feasibility of these alternatives in phase 3.”); 39 (same).

The Act does not allow Ecology to delay consideration of this criterion. The final report submitted to the legislature by June 1, 2020 must reflect consideration of the availability and feasibility of safer alternatives. It is apparent from Ecology’s recent statements that it has not yet given this criterion significant consideration. It may be that, after studying the availability and feasibility of safer alternatives in the coming months, Ecology elects to shorten its tentative list of priority consumer products.

b. Ecology’s Estimates of PFAS Contained in Carpets and Aftermarket Carpet Treatments Sold in Washington Are Seriously Flawed

i. Carpets

Ecology’s estimate regarding PFAS content in carpets sold in Washington relies entirely on a single extreme outlier data point within a single study. Draft Report at 29-30 (relying on KEMI, 2015). Further, this study – unlike other studies Ecology acknowledges but does not

⁸ August 2019 Webinar Questions & Answers, available at https://www.ezview.wa.gov/Portals/_1962/Documents/saferproducts/August_2019_Webinar_Questions_Answers.pdf.

⁹ *See also* Slide 11 of the February 19, 2020 webinar (“In the next phase [i.e., Phase 3], we will determine whether safer alternatives are available and feasible.”).

factor into its calculations – is not sufficiently transparent regarding the source of its data. *Id.* Ecology’s sole reliance on this single data point results in a seriously flawed – and drastically overestimated – assessment of PFAS contained in carpets sold in Washington. *Id.*

Ecology’s report cites four studies containing a total of five data points regarding PFAS concentrations in carpets. Those data points are summarized in Table 5 of the Draft Report. However, Ecology’s table represents concentration in several different units, making comparison of the data points difficult. In the table below, we have reproduced the data from Table 5 of the Draft Report, but we have converted all concentration units to percent.¹⁰

| Product Description | Concentration | PFAS Measured | Year Sample Collected | Reference |
|-----------------------|---------------|-----------------------|-----------------------|--------------------------------|
| Pre-treated carpeting | 0.0000475% | Total PFCA (C5 – C12) | 2007-2008 | EPA, 2009 ¹¹ |
| Pre-treated carpeting | 0.00000572% | Total PFCA (C4 – C14) | 2010 | Kotthoff, 2015 ¹² |
| Carpet | 0.0004010% | FTOH/FTS | 2007-2011 | Liu et al., 2014 ¹³ |
| Carpet samples | 0.00000735% | FTOH/FTS | 2010 | Kotthoff, 2015 |
| Carpet | 15% | PTFE and PASF | n/a | KEMI, 2015 |

The table above shows the extent to which the final data point is an outlier. This data point reflects a concentration more than four orders of magnitude (more than ten thousand times) larger than the next largest concentration shown. Yet the Draft Report does not acknowledge this. Instead, this is the only concentration data point Ecology uses when estimating the total amount of PFAS found in carpets sold annually in Washington. Draft Report at 29. Likewise, this is the only concentration data point Ecology uses when estimating the total amount of PFAS from carpeting disposed of annually in Washington. *Id.* at 30. Both calculations assume that most carpets sold in Washington contain 15% PFAS.

This assumption is unfounded. First, the KEMI study – unlike each of the other studies Ecology cites in Table 5 – did not involve actual testing of consumer products. The study provides no explanation for its assertion that PFAS contributes “around 15 percent” of the mass of synthetic carpets. KEMI, 2015, at 33. The study merely states that it “is based on official databases which contain information from manufacturers and importers about what substances they use in their production. We have had access to the Swedish Products Register and the EU’s IUCLID database and cosmetics database (CosIng), as well as various national inventory lists of industrial chemicals.” *Id.* No analytical data, or citations to analytical data, are provided to

¹⁰ In order to convert the unit $\mu\text{g}/\text{m}^2$ to $\mu\text{g}/\text{kg}$, we used a carpet mass of 1.02 kg/m^2 . This is the average carpet mass of the samples in the relevant study. EPA, 2009, at 48. In order to convert $\mu\text{g}/\text{kg}$ to percent, we multiplied by 1.0×10^{-7} .

¹¹ US Environmental Protection Agency (EPA). (2009). Perfluorocarboxylic Acid Content in 116 Articles of Commerce. EPA/600/R-09/33. Available at <http://www.oecd.org/env/48125746.pdf>.

¹² Kotthoff, M., Müller, J., Jüriling, H., Schlummer, M., & Fiedler, D. (2015). Perfluoroalkyl and polyfluoroalkyl substances in consumer products. *Environmental Science and Pollution Research*, 22, 14546–14559. Available at <https://doi.org/10.1007/s11356-015-4202-7>.

¹³ Liu, X., Guo, Z., Krebs, K. A., Pope, R. H., & Roache, N. F. (2014). Concentrations and trends of perfluorinated chemicals in potential indoor sources from 2007 through 2011 in the US. *Chemosphere*, 98, 51-57.

support this estimate of “around 15 percent.” By contrast, the other studies cited in Table 5 of the Draft Report are based on chemical analysis of collected samples.

Second, even the studies other than the KEMI study very likely overestimate PFAS concentration in carpets. None of these studies tested samples collected more recently than nine years ago.¹⁴ The earliest samples collected in the EPA and Liu studies were from 2007. Since that time, PFAS production and use has decreased drastically. For example, EPA found that carpets collected in 2007 contained nearly 100 times more PFOA than carpets collected the following year. EPA, 2009, at 44. During the period covered by the Liu study (2007-2011), researchers found “[t]here was generally a reduction in PFCA content, particularly for carpets.” KEMI, 2015, at 54 (emphasis added).

This decrease reflected voluntary industry phase-outs occurring at the time. As the EPA study notes, all eight major PFOA manufacturers committed to reduce facility emissions and product content by 95% no later than 2010 and to phase these chemicals out completely no later than 2015. EPA, 2009, at 43. These phase-outs drove significant downward trends of perfluorinated compounds in human blood serum. *See* Section II.

These phase-outs were in progress during the precise time samples for the EPA, Kotthoff, and Liu studies were collected. They also continued after these studies ended, as reflected by the recent announcements by Lowe’s and The Home Depot, as well as continuing downward trend of perfluorinated compounds in human blood serum. *See* Section II. The EPA, Kotthoff, and Liu studies, therefore, likely overestimate the PFAS content of carpets currently being sold in Washington. Subject to appropriate confidentiality protections for proprietary business information, 3M may be able to provide Ecology with product data sheets that further demonstrate the studies relied on by Ecology are outdated and vastly overstate the current PFAS content of carpets.

ii. Aftermarket Carpet Treatments

Ecology also significantly overestimates the amount of PFAS in aftermarket carpet treatments sold and used in Washington. None of the data Ecology relies on estimating the concentration of PFAS in these products is less than nine years old. In the interim, PFAS producers have continued to phase out these chemicals, and carpets have come onto the market that do not require aftermarket treatment.

The Draft Report cites three studies regarding PFAS concentration in aftermarket carpet treatments. The 2009 EPA study, discussed above, involved products collected between 2007-2008. *See* Section V(b)(i). The Herzke, et al. study involved samples collected in 2009.¹⁵ Finally, the Kotthoff, et al. study involved samples collected in 2010. *See id.*

¹⁴ EPA, 2009, at iv; Kotthoff, 2015, at 14548; Liu, et al. 2014, at 51.

¹⁵ Herzke, D., Olsson, E., & Posner, S. (2012). Perfluoroalkyl and polyfluoroalkyl substances (PFASs) in consumer products in Norway – A pilot study. *Chemosphere*, 88, 980–987. <https://doi.org/10.1016/j.chemosphere.2012.03.035>.

Since these samples were collected, voluntary phase-outs have significantly cut PFAS production and use worldwide. Additionally, some PFAS-free carpets on the market have stain resistant properties permanently embedded in the fibers.¹⁶ The manufacturers of these carpets do not recommend topical aftermarket treatment. *Id.* This is also unaccounted for in the Draft Report, and will decrease the amount of aftermarket carpet treatment sold in Washington.

VI. **Carpets and Aftermarket Carpet Treatments Should Not Be Identified as Priority Consumer Products**

Ecology intimated in its February 19, 2020 webinar that it may consider removing certain products from its finalized report if it learns that the products are not a significant source of priority chemicals in Washington (e.g., as a result of voluntary phase-outs). PFAS in carpets and aftermarket carpet treatments should fall into this category.

As discussed above, Ecology overestimated the amount of PFAS currently in these products. Ecology's calculations rely on outdated data and questionable data points, and do not account for manufacturer and retailer phase-outs. Ecology acknowledged during its recent webinar that peer-reviewed science often lags information that can be provided by product manufacturers. In other words, manufacturers may phase out use of a chemical, but that phase-out may not be reflected in peer-reviewed literature for several years. Ecology is correct. For example, as discussed in Section V, the Kotthoff, et al. study published in 2015 involved samples collected five years previously. Additionally, the Liu, et al. study published in 2014 study involved samples collected from as many as seven years previously.

Ecology should reframe its analysis, putting all available information into proper context. Ecology may then conclude – as we believe it should – that carpets and aftermarket carpet treatments should not be listed as priority consumer products.

3M appreciates the opportunity to provide these comments. Thank you for your consideration.

¹⁶ https://www.interface.com/US/en-US/sustainability/product-transparency/Stain-Resistance-PFAS-en_US.