

Comments for WA Interim PFAS CAP-April 2018 (due 5/31/2018)

#	Section	Page	Comment	Justification	Justification-Web Links	Commenter
1	Overall document - Use of Generic Terms	ALL	<p>Fluoropolymers are often included in the highly broad PFAS classification without regard to distinct characteristics that qualify them as meeting the globally accepted criteria for "Polymers of Low Concern" (2018, Henry; 2009, OECD; 2015, BIO by Deloitte). General use of PFAS should be avoided in order to provide clear understanding of this topic. Not differentiating these products/materials could lead to unnecessary worry by the public.</p> <p>1) Not all PFAS are "PFCs(Per- and Poly- Fluorinated Chemicals) of Environmental Concern". "PFCs of Environmental Concern" are highly fluorinated compounds that are small enough to be bioavailable, are persistent, and therefore have the potential to become widespread (mobile) in the environment where they may remain for multiple generations. Example: PTFE is part of the broad group of PFAS, is in the category of polymer, is a member of the fluoropolymer class, however is different from PFCs of Environmental Concern. Using the broader group name, PFAS, will include the fluoropolymer, PTFE, which is extremely stable, is not biodegradable, is non-toxic and is safe for the end-user.</p> <p>2) Defining Long- and Short-chain PFAS. Short-Chain is not defined in this document. General use of "PFAS" should be avoided to provide clear understanding of the topic. Also, the terms Long & short-chains can describe all of the PFAS classes and does not differentiate whether they are non-polymers or polymers and whether they pose a risk to the environmental or human health.</p> <p>3) There are many inclusions of the general term "PFAS" in this document. We recommend to either list the specific chemical, or rename the chemicals causing concern as "PFCs of Environmental Concern", so that Fluoropolymers, like PTFE, that are non-toxic and safe for the end-user, are not inadvertently included, and further propagate confusion in the public.</p> <p>4) When discussing historical emissions, avoid general use of PFAS and identify the chemistry.</p>	<p>REF: 30 January, 2018; Henry, Barbara J. et al, "A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers."</p>	<p>https://setac.onlinelibrary.wiley.com/doi/pdf/10.1002/ieam.4035</p>	Peggy J. Horst, W.L. Gore & Associates, Inc.
2	Executive Summary	1	<p>"PFAS (per- and polyfluorinated alkyl substances) are a group of over 3,000 synthetic organic chemicals that are used to make coatings and used in products that are resistant to oil and water, and or to reduce friction. They are used in the manufacturing of raw materials and coatings that go into the manufacture of added to cookware, carpets, food packaging, clothing, cosmetics, and other common consumer products. PFAS have many industrial applications and are used to make certain types of fire-fighting foams (aqueous film-forming foams, or AFFF)."</p>	<p>Providing clarification on product construction</p>		Peggy J. Horst, W.L. Gore & Associates, Inc.
3	Executive Summary - Why concerned.	1	<p>"Due to concerns about safety and persistence, EPA invited eight major companies in the PFAS industry to U.S. manufacturers have phased out two "long-chain" forms of PFAS, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS)."</p>	<p>"EPA asked the eight major companies in the PFAS industry to commit to reducing PFOA from facility emissions and product content by 95 percent no later than 2010, and to work toward eliminating PFOA from emissions and product content no later than 2015."</p> <p>REF: EPA Fact Sheet: 2010/2015 PFOA Stewardship Program; "Question 3: What were the goals of the program?"</p>	<p>https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/fact-sheet-20102015-pfoa-stewardship-program#goals</p>	Peggy J. Horst, W.L. Gore & Associates, Inc.
4	Recommended Actions #1.	2	<p>"Support State Board of Health rulemaking for limits on PFCs of Environmental Concern PFAS in Washington's drinking water supplies." In addition, determine which PFCs of Environmental Concern you will focus on.</p>	<p>This is a recommended action. Please be specific as to which group of chemicals will be the focus, to clearly identify and communicate the work to the general public. PFAS includes PTFE which is extremely stable, is not biodegradable, is non-toxic and is safe for the end-user and should not be included in this work. REF: 30 January, 2018; Henry, Barbara J. et al, "A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers."</p>	<p>https://setac.onlinelibrary.wiley.com/doi/pdf/10.1002/ieam.4035</p>	Peggy J. Horst, W.L. Gore & Associates, Inc.
5	Recommended Actions #2.	2	<p>Manage environmental PFCs of Environmental Concern PFAS contamination</p>	<p>This is a recommended action. Please be specific as to which group of chemicals will be the focus, to clearly identify and communicate the work to the general public. PFAS includes PTFE which is extremely stable, is not biodegradable, is non-toxic and is safe for the end-user and should not be included in this work. REF: 30 January, 2018; Henry, Barbara J. et al, "A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers."</p>	<p>https://setac.onlinelibrary.wiley.com/doi/pdf/10.1002/ieam.4035</p>	Peggy J. Horst, W.L. Gore & Associates, Inc.
6	foot note	2 & 11	<p>Recommend using the same units of measure in EPA's Health Advisory in order to be consistent and to minimize confusion to the public. Change 70 ng/L to 70 ppt for consistency,</p>	<p>"EPA's HAs, which identify the concentration of PFOA and PFOS in drinking water at or below which adverse health effects are not anticipated to occur over a lifetime of exposure, are: 0.07 parts per billion (70 parts per trillion) for PFOA and PFOS." REF: Federal Register, May 25, 2016, FR33250; EPA, Lifetime Health Advisories and Health Effects Support Documents for Perfluorooctanoic Acid and Perfluorooctane Sulfonate."</p>	<p>https://www.gpo.gov/fdsys/pkg/FR-2016-05-25/pdf/2016-12361.pdf</p>	Peggy J. Horst, W.L. Gore & Associates, Inc.
7	Introduction	3 - 4	<p>PFOS and its salts were included on <u>WA Department of Ecology's</u> original PBT list in 2006. PFOA and PFOS have been voluntarily withdrawn from the U.S. market.</p>	<p>Clarification on who is "Ecology"</p>		Peggy J. Horst, W.L. Gore & Associates, Inc.

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8	Introduction	4	Some Long-chain PFAS are highly persistent in the environment and highly bio accumulative in humans. They are readily absorbed following ingestion, resist metabolic breakdown, and are poorly excreted from the human body (ATSDR 2015).	Fluoropolymers are often included in the highly broad PFAS classification without regard to distinct characteristics that qualify them as meeting the globally accepted criteria for "Polymers of Low Concern" (2018, Henry; 2009, OECD; 2015, BIO by Deloitte). General use of PFAS should be avoided in order to provide clear understanding of this topic. Not differentiating these products/materials could lead to unnecessary worry by the public. Example: PTFE is part of the broad group of PFAS, is in the category of polymer, is a member of the fluoropolymer class, however is different from PFCs of Environmental Concern. Using the broader group name, PFAS, will include the fluoropolymer, PTFE, which is extremely stable, is not biodegradable, is non-toxic and is safe for the end-user. REF: 30 January, 2018; Henry, Barbara J. et al, "A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers."	https://setac.onlinelibrary.wiley.com/doi/pdf/10.1002/ieam.4035	Peggy J. Horst, W.L. Gore & Associates, Inc.
9	Introduction	4	Because of these concerns, manufacturers have been replacing long-chain PFAS with "short-chain" alternatives. that have similar physical and chemical properties.	Long-chain and short-chain alternatives have different physical and chemical properties. (e.g. boiling point).		Peggy J. Horst, W.L. Gore & Associates, Inc.
10	4.2 Ensure firefighting personal protective equipment notifications	18-19	"Provide technical assistance to state and local governments, and fire protection districts to give priority and preference to the purchase of personal protective equipment that does not contain <u>long-chain</u> PFAS"	Per or polyfluoroalkyl substances (PFAS) are a broad group of materials with very different properties and applications. "PTFE is extremely stable and not biodegradable. It is a large, stable molecule that is too large to be bioavailable. Therefore PTFE is non-toxic, and safe for the end-user. PTFE is the raw material used to make the membranes in our products." REF: 30 January, 2018; Henry, Barbara J. et al, "A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers." PFAS are used to meet structural fire-fighting gear performance standards, such as <u>NFPA-1971, 2018 Edition</u> . Specifically, some short-chain, side-chain fluorinated polymers are used in coatings and provide durable water and oil repellency. These types of coatings partnered with PTFE membranes help to protect the end user from the elements while allowing breathability, which helps to reduce heat stress.	https://setac.onlinelibrary.wiley.com/doi/pdf/10.1002/ieam.4035	Peggy J. Horst, W.L. Gore & Associates, Inc.
11	Sources of PFAS Release	22	TITLE: "Sources of <u>Potential</u> PFAS Release" SUBTITLE: "PFAS <u>may</u> have been released to the environment from:"	It has not been shown that all PFAS-containing consumer products release PFCs of Environmental Concern. REF: 30 January, 2018; Henry, Barbara J. et al, "A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers."	https://setac.onlinelibrary.wiley.com/doi/pdf/10.1002/ieam.4035	Peggy J. Horst, W.L. Gore & Associates, Inc.
12	Sources of PFAS Release	22	-"Disposal of PFAS-containing consumer products outside of landfills and WWTPs."	Please clarify this bullet; it is not clear as to what is intended. Per or polyfluoroalkyl substances (PFAS) are a broad group of materials with very different properties and applications. "PTFE is extremely stable and not biodegradable. It is a large, stable molecule that is too large to be bioavailable. Therefore PTFE is non-toxic, and safe for the end-user. PTFE is the raw material used to make the membranes in our products." REF: 30 January, 2018; Henry, Barbara J. et al, "A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers."	https://setac.onlinelibrary.wiley.com/doi/pdf/10.1002/ieam.4035	Peggy J. Horst, W.L. Gore & Associates, Inc.
13	Supplemental Information	22	After the table on pg 21 listing "Types of PFAS", consider adding a paragraph on " fluoropolymers " and why they are not a concern. " <u>Fluoropolymers are often included in the highly broad PFAS classification without regard to distinct characteristics that qualify them as meeting the globally accepted criteria for "Polymers of Low Concern" (2018, Henry; 2009, OECD; 2015, BIO by Deloitte). Fluoropolymers are highly fluorinated compounds that are not small enough to be bioavailable, are not persistent, and therefore do not have the potential to become widespread (mobile) in the environment.</u> "	REF: 30 January, 2018; Henry, Barbara J. et al, "A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers."	https://setac.onlinelibrary.wiley.com/doi/pdf/10.1002/ieam.4035	Peggy J. Horst, W.L. Gore & Associates, Inc.
14	Supplemental Information	22	"Two studies estimated global releases of legacy PFAS from 1970-2002 (Paul et al. 2009, Prevedouros et al. 2006). <u>Based on Washington Department of Ecology estimates, the Washington proportion of those global amounts could represent up to 18 metric tons per year of legacy PFAS releases in our state from coatings that provide oil and water resistance to carpet, paper, and packaging, and apparel, and AFFF based on Ecology estimates.</u> " " PFAS emissions are reported to mostly occur during consumer product use and after disposal (Paul et al., 2009). <u>For example, other PFAS emissions can occur locally when treating a product, (for example during treatment of carpet or apparel), and from product waste created during the treatment process.</u> " "Landfilling of PFAS-containing products (<u>like products treated with water resistant coatings?</u>) could represent 10 metric tons of PFAS annually disposed in Washington landfills. This estimate is based on testing for PFAS in products (<u>recommend listing products types by highest contributor... like oil/water resistant coatings on paper products, carpet, etc.</u>) and landfill disposal estimates (Herzke et al. 2012; Liu et al. 2015; Kothoff et al. 2015; Ecology 2010a and 2016c)."	Please clarify this section; it is not clear to the reader as to which chemicals are a concern, where the emissions are being generated and what is the highest concern in Washington State. It is important to provide clear understanding to help avoid confusion or misrepresentation of the data. • Please confirm that the majority of PFAS exposure in Washington occurs from contaminated drinking water stemming from the use of AFFF and application of coatings to consumer products was secondary. • Ecology, 2010a as updated 2018, pg 14, Table 8: lists the top 15 waste streams for the state. (Paper, Packaging, carpet, diapers, furniture...) https://fortress.wa.gov/ecy/publications/documents/1007023.pdf • It is not clear which PFAS your are identifying as causing emissions. We recommend to either list the specific chemical, or rename the chemicals causing concern as "PFCs of Environmental Concern", so that Fluoropolymers, like PTFE, that are non-toxic and safe for the end-user, are not inadvertently included, and further propagate confusion in the public. REF: 30 January, 2018; Henry, Barbara J. et al, "A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers."	https://setac.onlinelibrary.wiley.com/doi/pdf/10.1002/ieam.4035	Peggy J. Horst, W.L. Gore & Associates, Inc.