



# **PFAS Basics**

## **Whidbey Island Community PFAS Listening Session June 22, 2023**

# Claire Nitsche, MPH



## Environmental Health Educator

Health Promotion and Education Division

Office of Public Affairs and Equity

Washington State Department of Health

[claire.nitsche@doh.wa.gov](mailto:claire.nitsche@doh.wa.gov)

# What ARE PFAS?

- “PFAS” is short for “**p**er- and poly**f**luoro**a**lky**l s**ubstances.”
  - “Forever chemicals.”
- Family of 10,000 human-made chemicals.
  - PFOA and PFOS = two of the most studied, no longer used in U.S. manufacturing.
- Used since 1950s in wide range of consumer products.
  - Historically used in AFFF firefighting foam.
- **Currently unregulated at the federal level in drinking water – proposed federal regulations are being reviewed right now by EPA.**



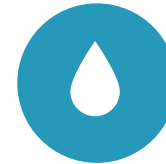
# PFAS are a problem because...



**Some are  
toxic.**



**Escape  
from  
products.**



**Can get into  
soil and  
groundwater.**



**Don't break  
down  
easily.**



**Spread easily  
in outdoor  
environment.**



**Bioaccumulate.**



# Having higher levels of the BEST studied PFAS in your body could...



**Affect your immune system and make some vaccinations less effective.**



**Increase risk for kidney cancer.**



**Increase risk for high cholesterol.**



**Increase risk for low birthweights.**



# Exposure to the BEST studied PFAS may also increase your risk for...



**Other cancers,  
like testicular  
cancer.**



**Thyroid  
disease.**



**High blood  
pressure  
during  
pregnancy.**



**Other  
reproductive  
issues.**



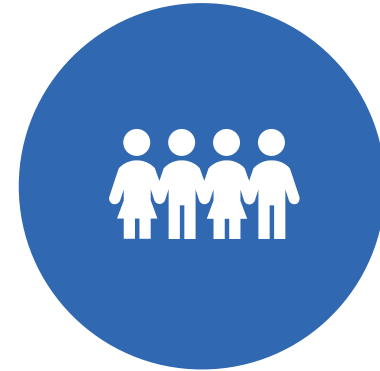
# Who is most vulnerable?



**Pregnant people.**



**Babies in the  
womb.**



**Children ages 5  
and younger.**



# What is my risk?

Current public health studies look at how PFAS affect people's health on a community level.

## Factors that influence how your body responds to ANY toxic chemical:

- 1) Your diet, lifestyle, and habits.
- 2) Your individual and family medical history.
- 3) Your overall health.

## Individual exposure:

- 1) How much of the chemicals you were exposed to.
- 2) How often you were exposed.
- 3) How long you were exposed for.
- 4) Which PFAS chemicals you were exposed to.






# Washington State Action Levels (SALs)

## Washington State Action Levels for PFAS in Drinking Water

### WHEN AND HOW TO LOWER YOUR EXPOSURE TO PFAS IN DRINKING WATER:



-  PFAS have been discovered above recommended federal and state safety levels in the drinking water supplies of millions of Americans, including in Washington State. Because it can take many years for our bodies to clear PFAS chemicals, exposure to levels above recommended limits could lead to harmful health effects.
-  Washington State Action Levels (SALs) help you know when to take action to protect your health. If your tap water has PFAS above our SALs, take action to reduce PFAS in the water you drink and cook with.
-  Limiting PFAS exposure is the best way to protect yourself and your family. The sooner you lower your PFAS exposure, the sooner your body can start clearing PFAS.

Installing a PFAS-reducing water filter on your kitchen sink can help lower PFAS levels in your drinking and cooking water.

Follow the advice on the back page if PFAS levels in your drinking water are higher than our SALs.

Our SALs are based on the best available science, and may be updated as we get more information on PFAS health impacts.

Water tests from private labs sometimes give results with different measurements, or "units", than parts per trillion. Our SALs are shown here in these other common units.

PFAS CHEMICALS	SAL in parts per trillion (ppt)	SAL in nanograms per liter (ng/L)	SAL in micrograms per liter (ug/l)	SAL in parts per billion (ppb)
<b>PFOA</b> <small>(perfluorooctanoic acid)</small>	10 ppt	10 ng/l	0.010 ug/l	0.010 ppb
<b>PFOS</b> <small>(perfluorooctane sulfonate)</small>	15 ppt	15 ng/l	0.015 ug/l	0.015 ppb
<b>PFNA</b> <small>(perfluorononanoic acid)</small>	9 ppt	9 ng/l	0.009 ug/l	0.009 ppb
<b>PFHxS</b> <small>(perfluorohexane sulfonate)</small>	65 ppt	65 ng/l	0.065 ug/l	0.065 ppb
<b>PFBS</b> <small>(perfluorobutane sulfonic acid)</small>	345 ppt	345 ng/l	0.345 ug/l	0.345 ppb

# Washington State Action Levels (SALs)

---



Help you know when to take action to protect your health by lowering your PFAS exposure.



Based on the best available science at the time they were set.



May be updated as we get more information about PFAS health impacts.

# Washington State Action Levels (SALs)

*Water tests from private labs sometimes give results with different measurements, or "units", than parts per trillion. Our SALs are shown here in these other common units.*

<b>PFAS CHEMICALS</b>	<b>SAL in parts per trillion (ppt)</b>	<b>SAL in nanograms per liter (ng/L)</b>	<b>SAL in micrograms per liter (ug/l)</b>	<b>SAL in parts per billion (ppb)</b>
<b>PFOA</b> (perfluorooctanoic acid)	<i>10 ppt</i>	<i>10 ng/l</i>	<i>0.010 ug/l</i>	<i>0.010 ppb</i>
<b>PFOS</b> (perfluorooctane sulfonate)	<i>15 ppt</i>	<i>15 ng/l</i>	<i>0.015 ug/l</i>	<i>0.015 ppb</i>
<b>PFNA</b> (perfluorononanoic acid)	<i>9 ppt</i>	<i>9 ng/l</i>	<i>0.009 ug/l</i>	<i>0.009 ppb</i>
<b>PFHXS</b> (perfluorohexane sulfonate)	<i>65 ppt</i>	<i>65 ng/l</i>	<i>0.065 ug/l</i>	<i>0.065 ppb</i>
<b>PFBS</b> (Perfluorobutane sulfonic acid)	<i>345 ppt</i>	<i>345 ng/l</i>	<i>0.345 ug/l</i>	<i>0.345 ppb</i>

# CHANGING FEDERAL REGULATIONS



Proposed Maximum Contaminant Levels  
("MCLs") for 6 of the best studied PFAS in  
Drinking Water

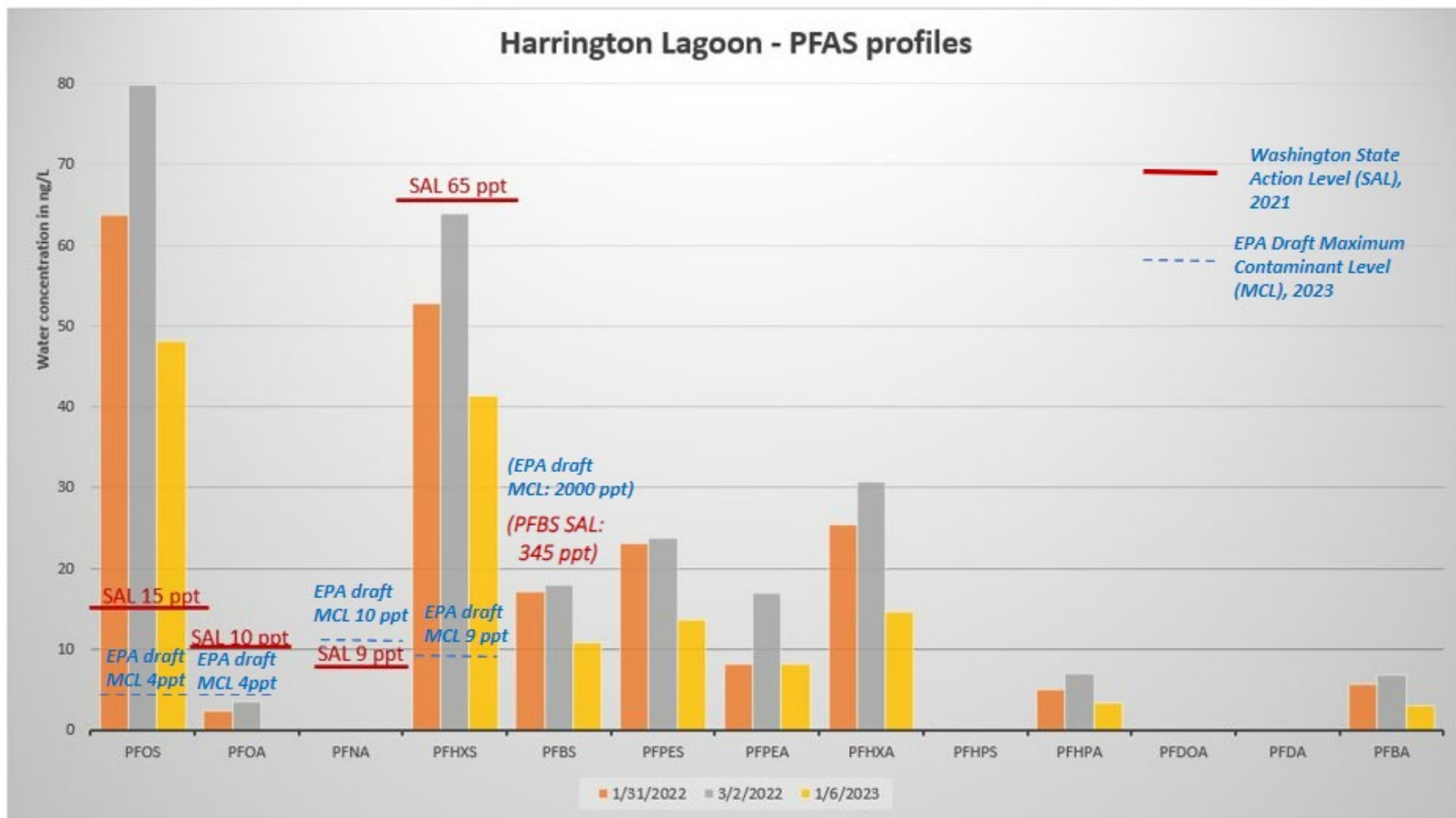
# 2023 EPA Draft MCLs

---

- MCLs are an enforceable standard for public water systems.
  - “Law of the Land,” though states are allowed to set stricter limits.
  - When MCLs are adopted, they will replace our SALs.
- EPA proposed the new MCLs in March, held public comment period through May.
  - We are waiting to hear what their final MCL numbers are. Expecting that early 2024.



## Harrington Lagoon - PFAS profiles



— Washington State Action Level (health safety recommendations)

- - - 2023 EPA Draft MCL

# WASHINGTON STATE DEPARTMENT OF ECOLOGY

---

What is the MTCA Clean Up Process?

# The MTCA Cleanup Process

