The Office of Drinking Water works with others to protect the people of Washington State by ensuring safe and reliable drinking water.

Washington State Department of HEALTH

SBOH PFAS UPDATE

Office of Drinking Water
Office of Environmental Public Health Sciences

SBOH PFAS Update

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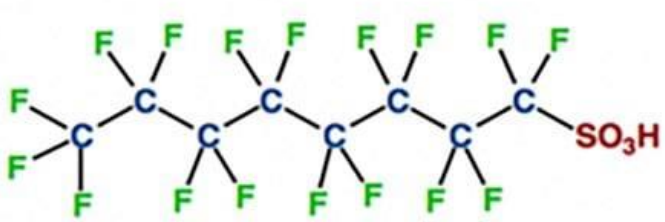
Outline

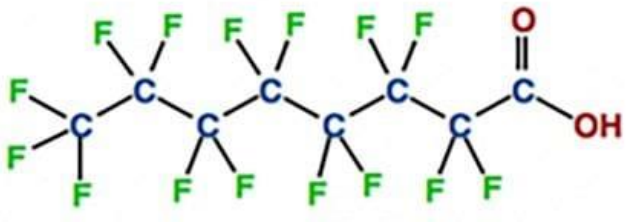
- Background
- Update on water testing required by rule
- Update on Results and Responses
- Funding
- New EPA science assessments
- Proposed MCLs and DOH comments
- Options for potential SBOH rule-making

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)
Nonstick, Stain and Water Resistant, Heat Stable

Per- and polyfluoroalkyl substances (PFAS)



PFOS - perfluorooctanesulfonic acid



PFOA - perfluorooctanoic acid

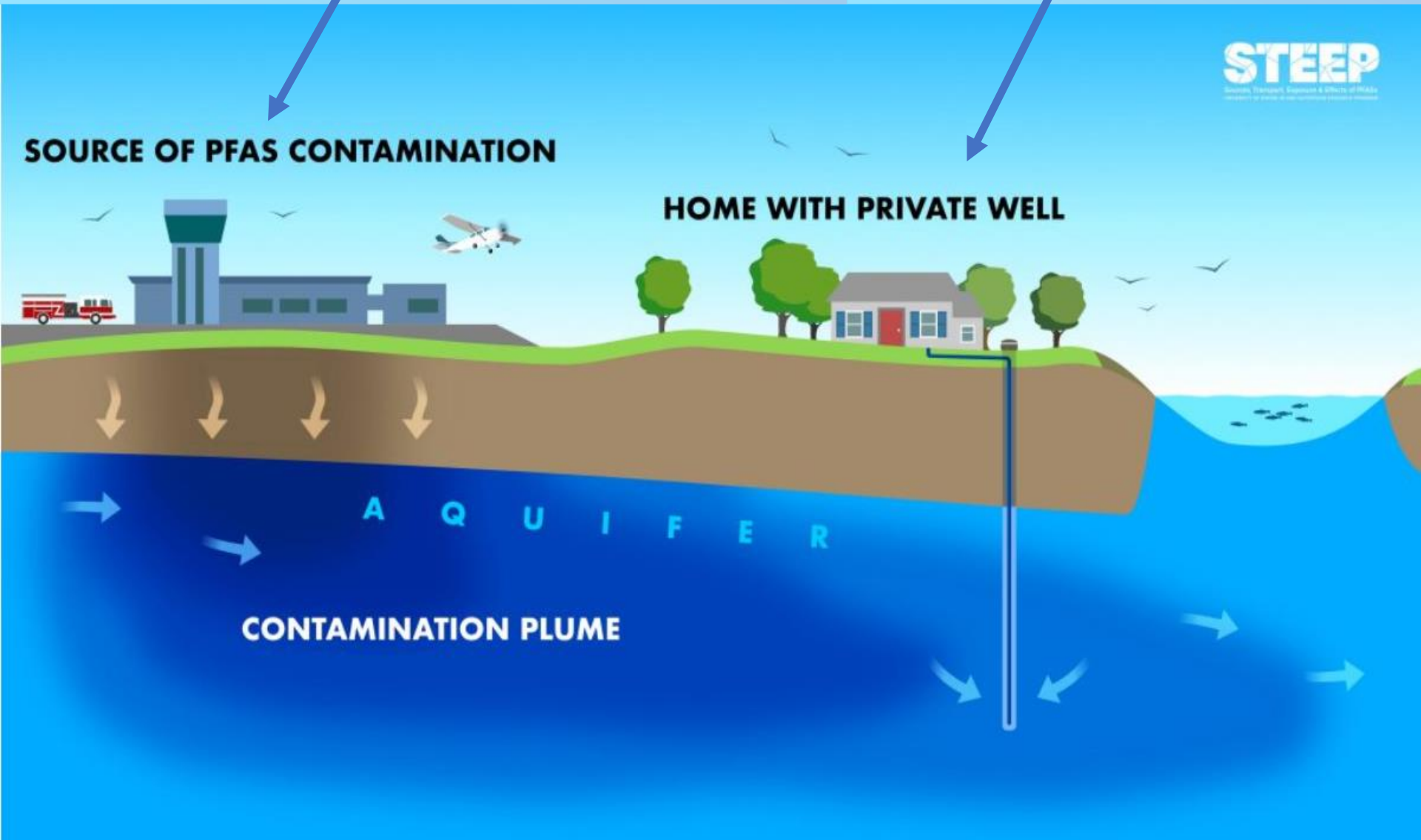
- Large class of Industrial chemicals, not naturally occurring
- Carbon—fluorine bond is extremely stable—persistent
- Some PFAS build up in fish, wildlife, people—bioaccumulate
- Fluorinated tail—repels water and oil, head group is water soluble—mobile in water

Known/suspected sources

- Military sites and civilian airports
- Fire fighting and training areas
- Landfills?
- Industrial discharge of PFAS?

Types of drinking water impacted

- Private wells and Group B systems
- Public water systems—Group A
- Schools, businesses



Health Concerns

Toxicity observed in **laboratory animals**

- Liver toxicity
- Developmental toxicity
- Reproductive toxicity
- Immune toxicity
- Endocrine disruption
- Tumors in liver, pancreas, testes

In humans, PFAS exposure is associated with

- ↑ Cholesterol levels
- ↓ Antibody response
- ↓ Birth weight
- ↑ Risk of kidney cancer
- ↑ Liver enzyme levels

- ↑ Hypertension during pregnancy
- ↑ Risk of thyroid disease
- ↑ Risk of testicular cancer

WASHINGTON STATE BOARD OF HEALTH

2021 State Action Levels (SALs)

Features

- State Action Levels for 5 PFAS
- Requires PFAS testing by most Group A water systems by December 2025
- Requires notification of customers
- Requires follow-up monitoring
- Treatment is not required but is encouraged and supported with earmarked funding

Drinking Water Contaminant	SAL (parts per trillion)
PFOA	10
PFOS	15
PFNA	9
PFHxS	65
PFBS	345

SALs set to be Health Protective

A level in water expected to be without appreciable health effects over a lifetime of exposure, including in sensitive groups.

Based on best available science at time.

DOH Implementation of SALs

1

Regulatory

Enforce requirements

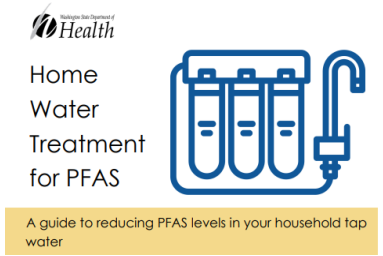
2

Technical Assistance

Public Water Systems

Local Health Departments

3

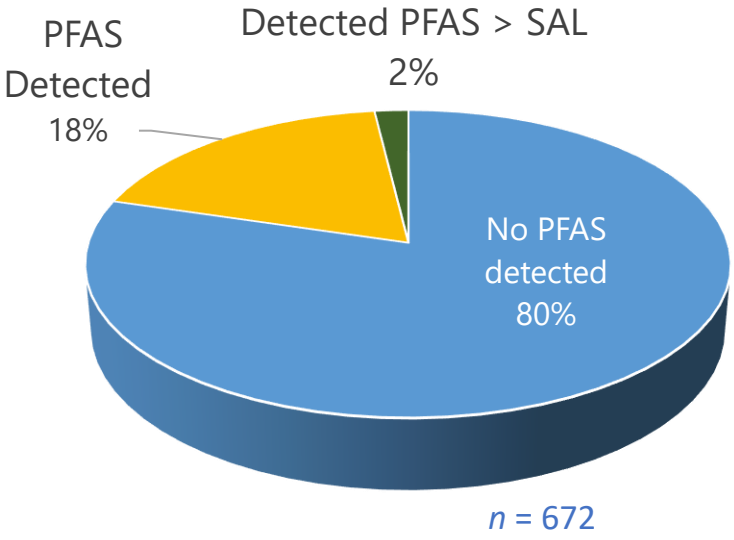


Public Health Advice

Develop advice

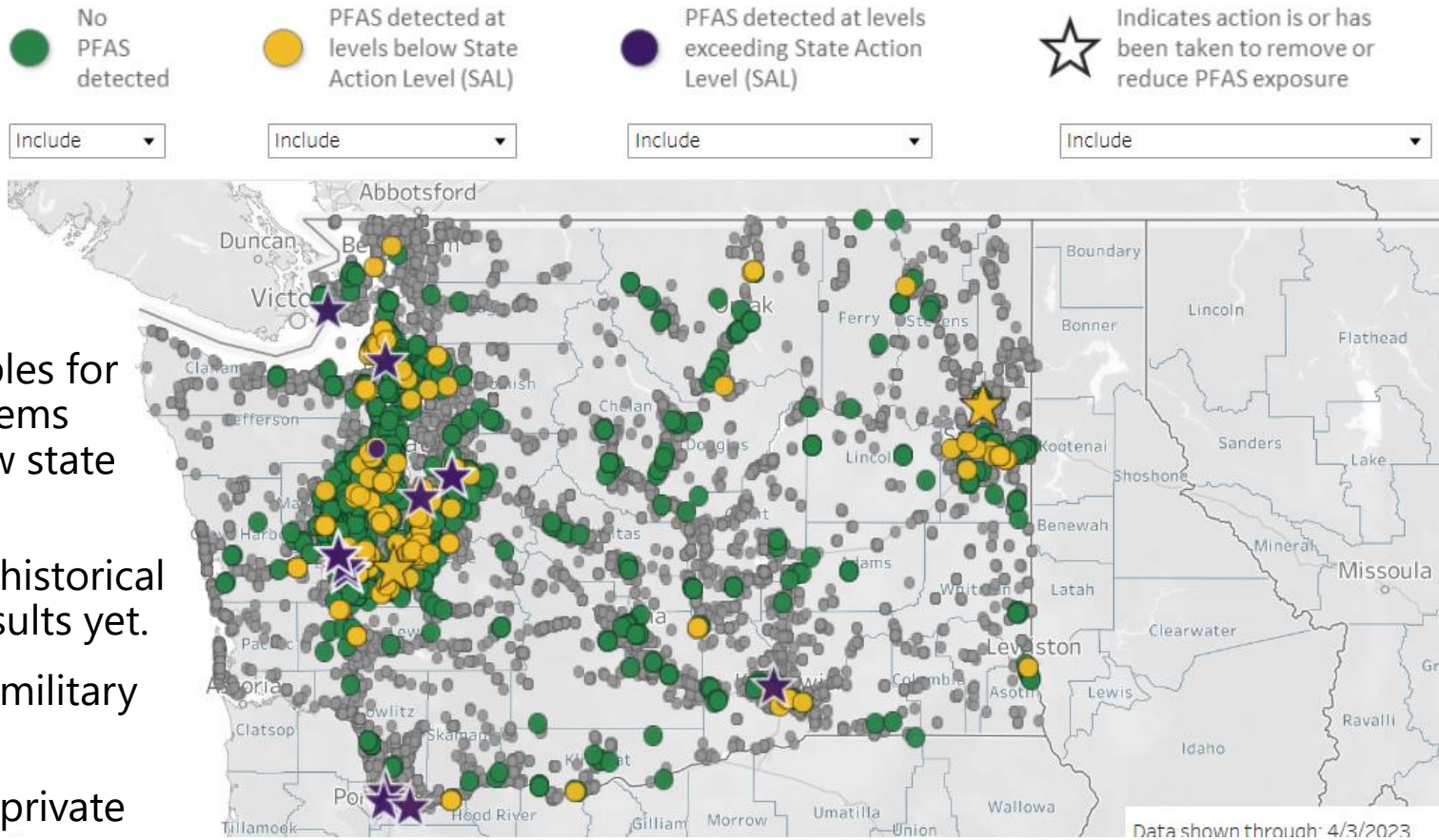
Support communications with customers

Update on Drinking Water Testing



- ~1/4 of public water systems have tested for PFAS (672/2422 systems)
- 80% of systems tested report no PFAS
- 2% of water systems tested have PFAS > SAL

Map of PFAS Drinking Water Testing



Only includes samples for Group A water systems complying with new state rule.

- Doesn't include historical water testing results yet.
- Doesn't include military testing yet.
- Doesn't include private well results

https://doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/pfas

Results

PFOA and PFOS SALs drive exceedances.

1 source exceeds PFBS and PFHxS SALs; also > PFOS and PFOA

1 source exceeds SAL for PFNA only.

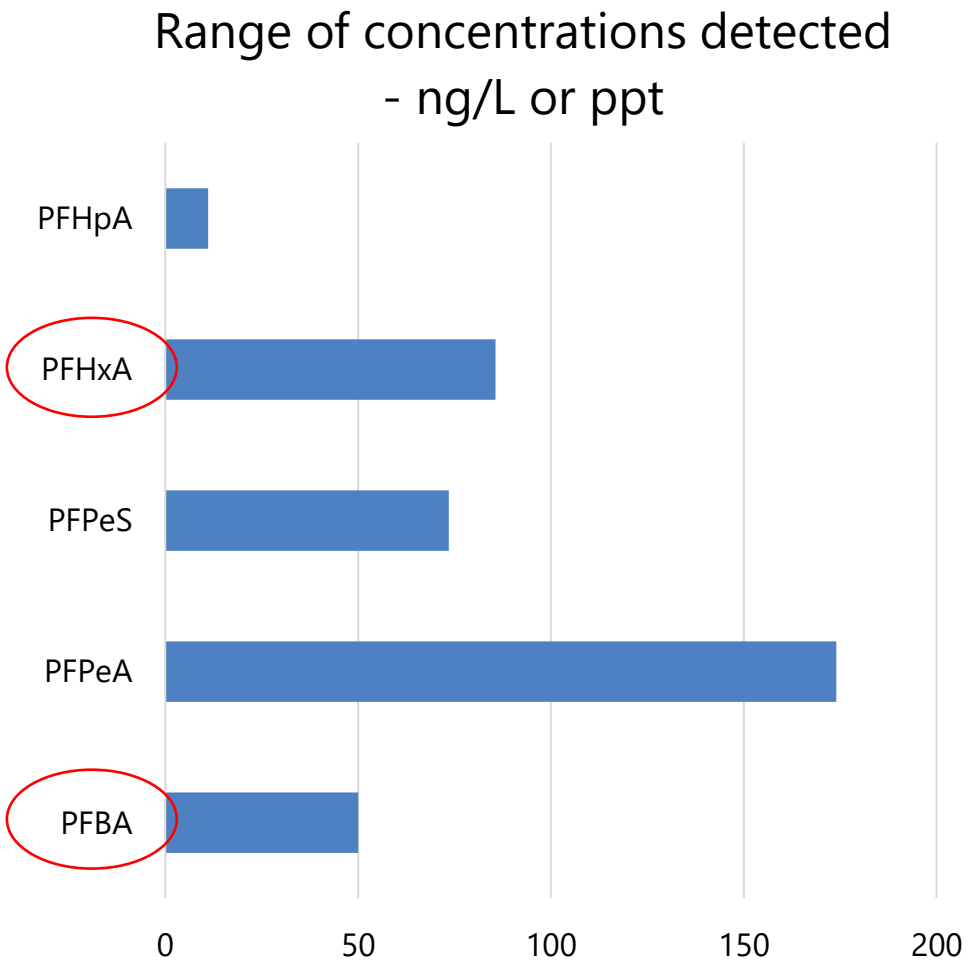
Other PFAS

Five other PFAS frequently detected

No SAL to guide action

Develop state advice?

Adopt SAL? MCL?



Note: Range shown doesn't include one water system with multiple PFAS at very high levels in San Juan County (outlier).

How Water Systems are Responding to Detections

Community Water Systems

- Notifying public of SAL exceedance (required)
- Annual notification for PFAS detections (required)
- Some removing sources from service
- Some offering bottled water
- Exploring treatment alternatives

DOD Military Bases

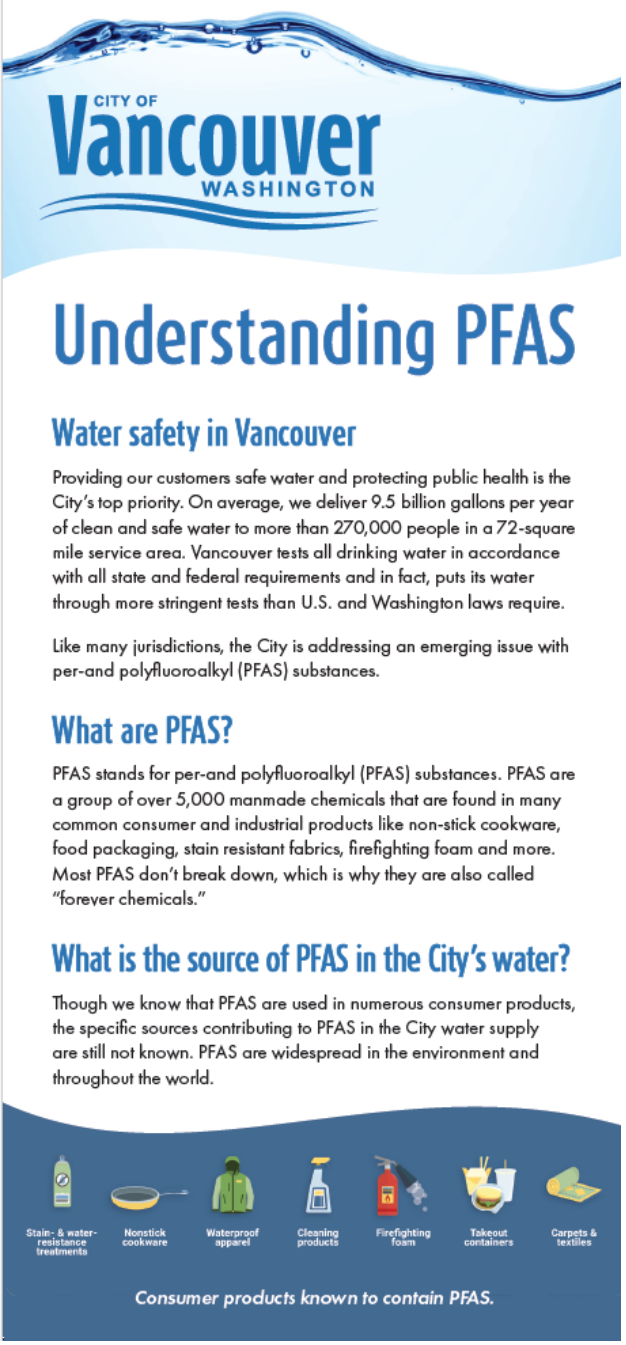
- Providing bottled water and treatment solutions
- Not following State advice—follow EPA 2016 HAL

Tale of Two Systems

Hannah Heights, San Juan County

Photo credit: Karen Ducey, The Seattle Times May 8, 2023.

- Serves 44 homes
- Very high levels of PFAS
- Do Not Drink—using bottled water for drinking and cooking
- San Juan County Health Dept, DOH, and Ecology are providing technical assistance
- Homeowners are researching options—applying for financial support

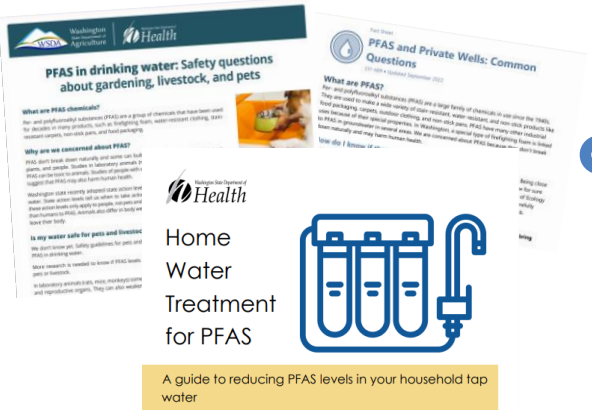


Vancouver, WA

- Serves > 272,000 people
- Low levels of PFAS
- Managing as a chronic contaminant with advice for sensitive populations
- Hired engineering and communication consultants
- Partly funded by SRF to install filtration—*in process*

Educational Outreach & Community Engagement

Youtube videos & factsheets



- DOH and local health partner to help impacted communities know when and how to take action to reduce their exposure
- Communities should be respected as full partners in problem solving
- PFAS are still largely unregulated compounds, many gaps to bridge

Community Listening Sessions

Washington State Action Level for PFAS in Drinking Water

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

If your tap water has PFAS above our SALs, install a filter to reduce the PFAS in the water used for cooking and drinking.

This is especially important for people who are pregnant, breastfeeding, infants drinking formula mixed with tap water, and children under five.

PFAS in tap water don't go through skin easily. It's OK to bathe, wash dishes, laundry, etc.

Other Important Routes of Home Exposure

Gardening

- No clear guideline for what level in garden water is a problem
- Precautionary advice

Livestock

- No clear guideline for what level in animal drinking water is a problem
- Precautionary advice

Funding Resources for PFAS Water Testing and Mitigation

Group A Water Systems

- Drinking Water State Revolving Fund loans (DWSRF) $75M*
- Infrastructure & Jobs Investment Act (IIJA) Stimulus Funding loans $40.2M*
- IIJA Emerging Contaminants loans $17M*
- Emerging Contaminants Small and Disadvantaged Communities (ED-SDC) grants $17M

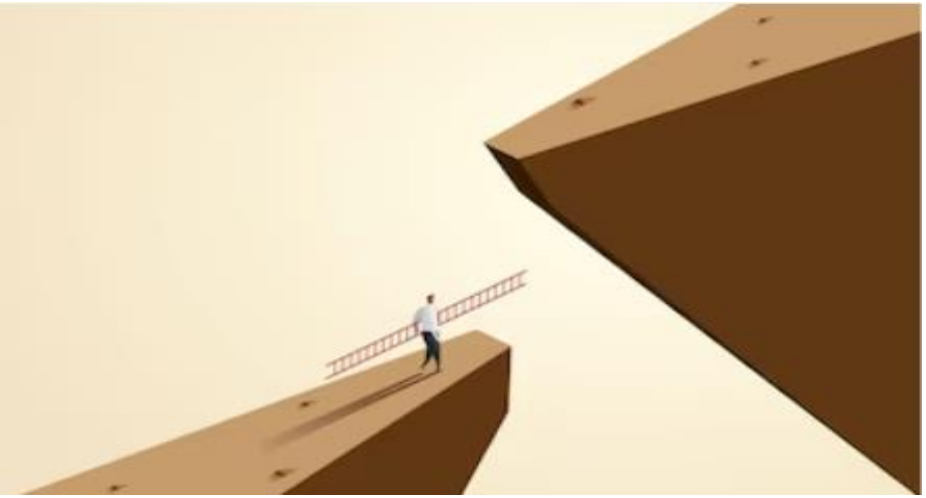
**Up to 100 percent loan principal forgiveness for disadvantaged communities. All amounts are $/per year, unless otherwise marked.*

Group B Water Systems and Private Wells

- State Funding for 2023-2025 biennium only $800K
- MTCA for Point-of-Use filters for private wells near Yakima Training Center with PFAS > SALs but below Army action level (70 ppt for PFOS+PFOA) $70K**

***MTCA funding was one-time funding.*

Gaps in Access to Resources



- Lack of resources for interim response—providing alternate water while a long-term solution is researched and installed
- Federal funds for PFAS testing and mitigation are not available to private wells and Group B
- Smaller public water systems and private wells lack resources and capacity to find PFAS sources and recoup costs

Health Equity Considerations

Health Advice

SAL or MCL w/ funding support

Evolving Health Guidelines for Drinking Water (ng/L or ppt)

EPA Health Advisories 2016

PFOA 70

PFOS 70

WA SALs 2021

PFOA	10
PFOS	15
PFNA	9
PFHxS	65
PFBS	345

Non-cancer endpoints sufficiently protective of cancer endpoint

EPA Health Advisories 2022

PFOA 0.004

PFOS 0.02

PFBS 2000

GenX 10

EPA proposed MCLs 2023

PFOA 4

PFOS 4

Grouped MCL for PFBS, GenX, PFNA & PFHxS

EPA's Proposed National Standards for PFAS in Drinking Water

- DOH is providing comments
- Comment period closed May 30, 2023
- Coordinating with SBOH, Governor's Office, and Ecology

Comments

- DOH supports the rule in general
- Reconsider some science decisions on sensitive groups
- Identified areas to clarify and add more guidance
  - Data challenges
  - Small system compliance
  - Laboratory capability and capacity
  - Monitoring waivers

EPA New Science

2016

- Developmental effects in laboratory animal testing was basis for health-based values of PFOA, PFOS
- Not enough info to set values for other PFAS

2023

- Epidemiology studies are basis for new health-based values for cancer, immune, developmental, liver, and cardiovascular effects for PFOA, PFOS
- Humans more sensitive than rodents
- Regulating PFOA, PFOS as likely human carcinogens
- Regulating 4 PFAS as group—assume effects are additive

Impact of Proposed Federal MCLs

So Far…

Under WA SALs

- 22 sources at 14 public water systems exceed WA SALs

Under Proposed PFOA and PFOS MCLs

- 71 additional water sources would exceed at 47 public water systems

Evolving Health Guidance on PFAS in Drinking Water

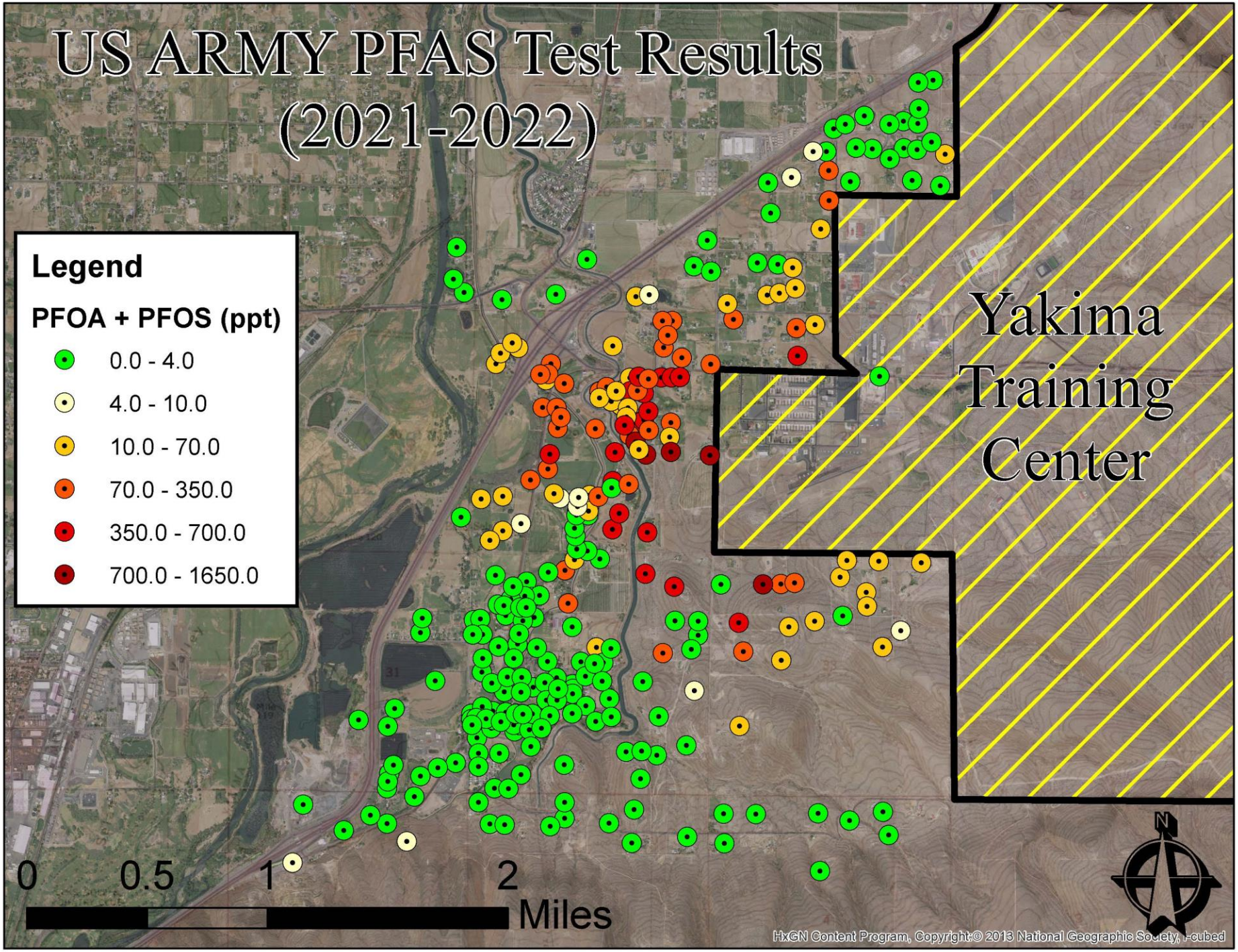
State vs. proposed EPA MCLs for PFAS in Drinking Water (ng/L or parts per trillion)		
Individual PFAS	**WA State Action Levels (2021)**	**EPA proposed MCL (2023)**
PFOA	10	4
PFOS	15	4
Group MCL		HBWC used in hazard index*
PFNA	9	10
PFHxS	65	9
PFBS	345	2,000
GenX	-	10

** Health-based water concentration (HBWC) are the "acceptable" values used to create a ratio of observed/acceptable for each of 4 PFAS. If the ratios add up to more than 1.0, the hazard index MCL is exceeded, and action must be taken to lower PFAS.*

Options for Potential Rulemaking

- Wait for federal MCLs (2024?)
- Begin state rule-making in 2023?

- Adopt federal MCLs by reference when final
- Retain WA PFBS number as state MCL
- Lower SAL values to match proposed MCLs
- Adopt new SALs or MCLs for PFBA & PFHxA
- Retain state requirement that TNCs test for PFAS in areas of contamination


US ARMY PFAS Test Results
(2021-2022)
Legend
PFOA + PFOS (ppt)
0.0 - 4.0
4.0 - 10.0
10.0 - 70.0
70.0 - 350.0
350.0 - 700.0
700.0 - 1650.0
Yakima
Training
Center
0
0.5
1
2
Miles
N
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