Testing PFAS in King County's Waste Systems

Sampling results for 2023-2024

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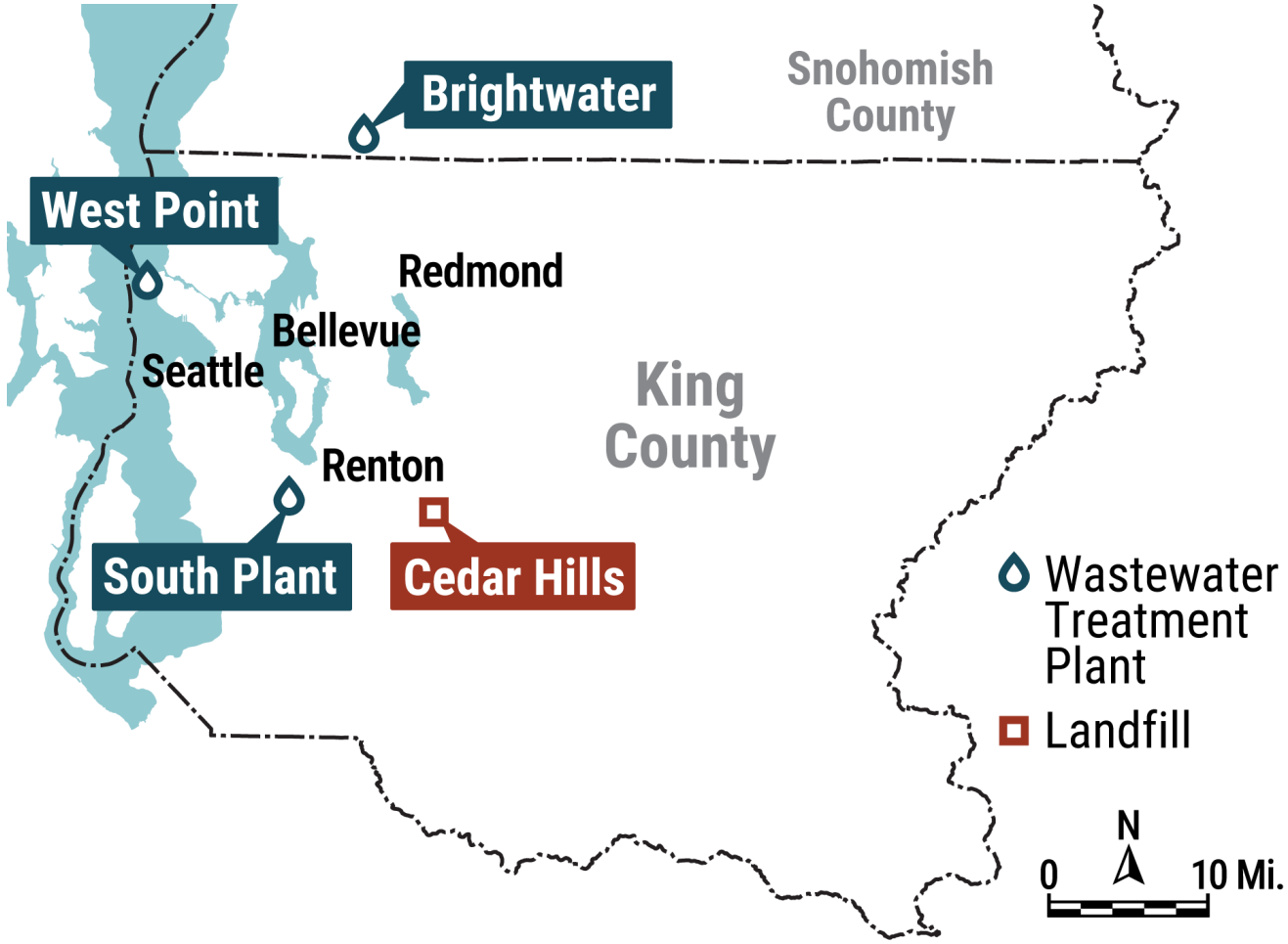
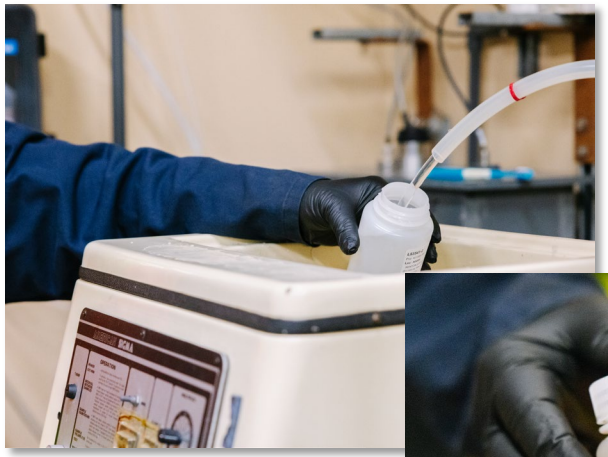
Sources of PFAS

What King County is doing

- Promote source control
- Pursue legal action against PFAS producers
- Work with local, state, and federal agencies
- Measure PFAS levels in our environment and in our waste streams

Where King County tested





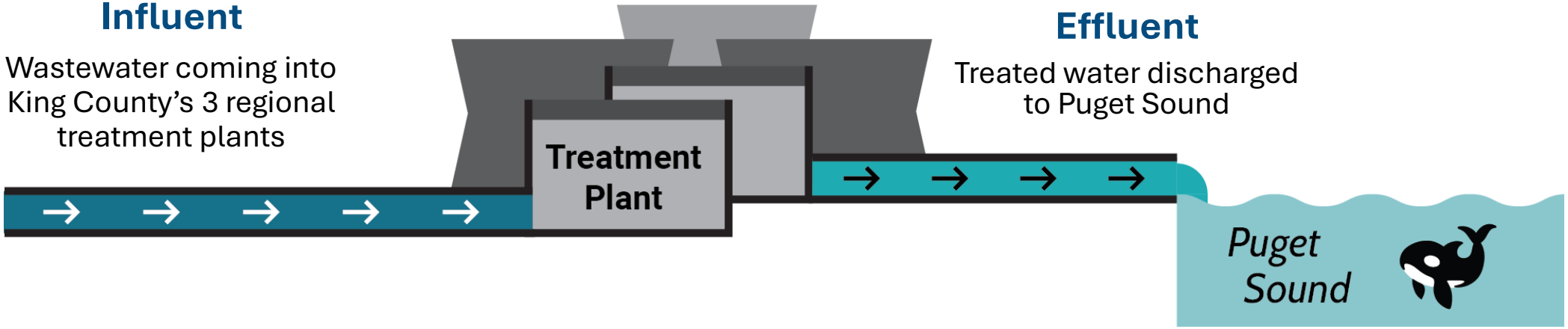
What King County tested

Influent

Wastewater coming into King County's 3 regional treatment plants

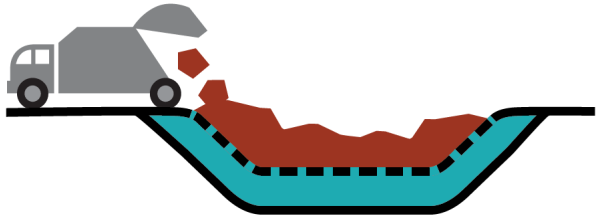
Effluent

Treated water discharged to Puget Sound



Biosolids

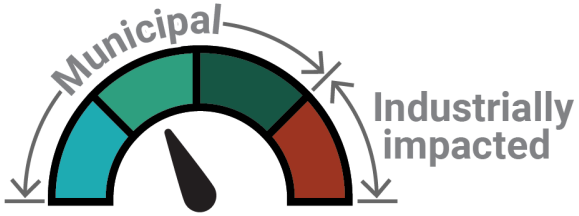
Fertilizer replacement produced from highly treated organics present in wastewater



Landfill leachate

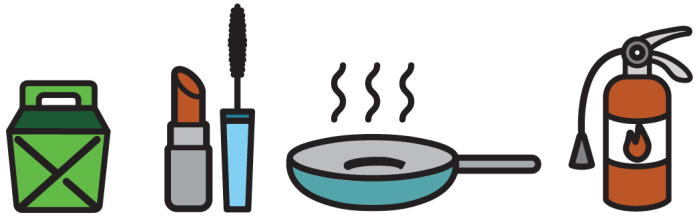
Liquid collected from Cedar Hills Regional Landfill and sent to South Treatment Plant for further treatment.

Top results

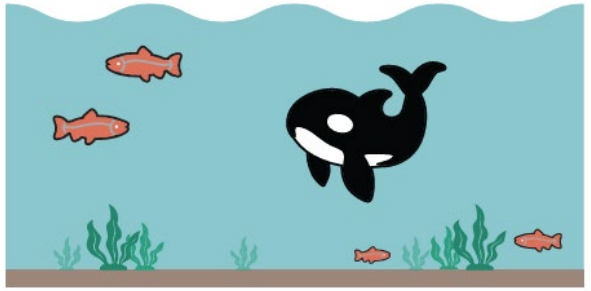


Wastewater
Similar to average municipal systems

Landfill leachate
Magnitudes higher concentration than wastewater



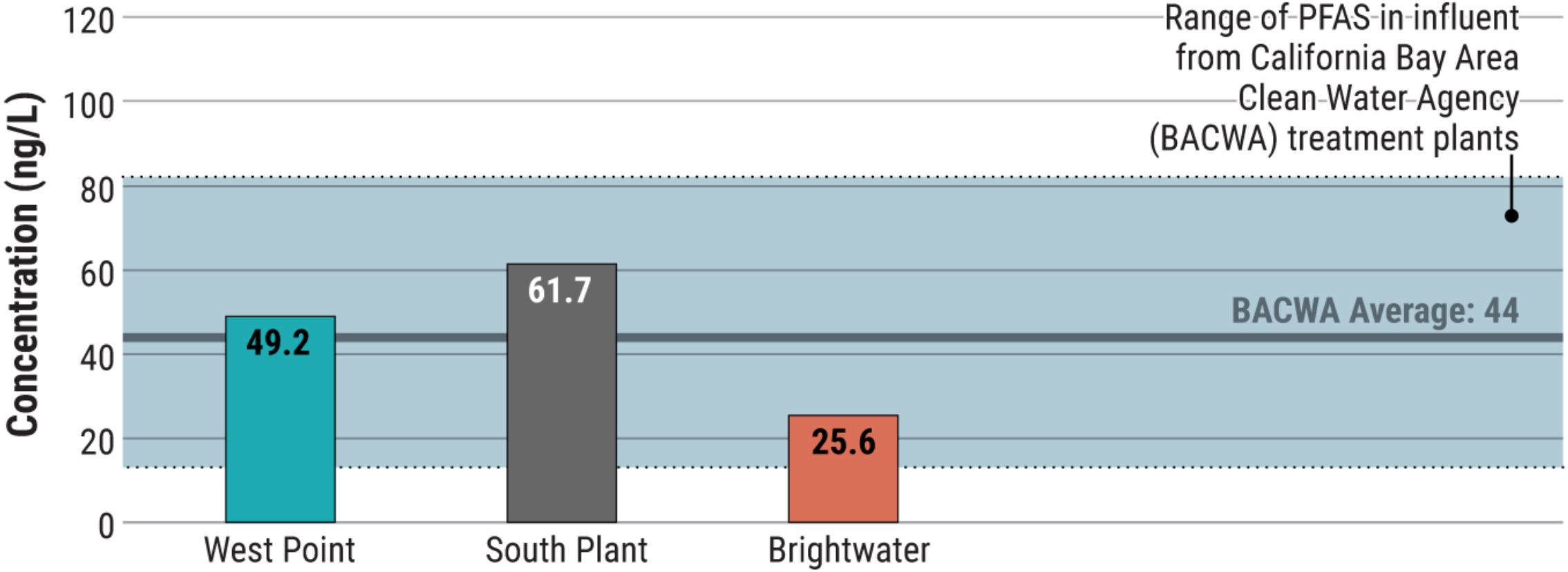
Diffuse sources
Likely coming from everyday products put in drains and trash



Aquatic life
Effluent remains protective of aquatic life

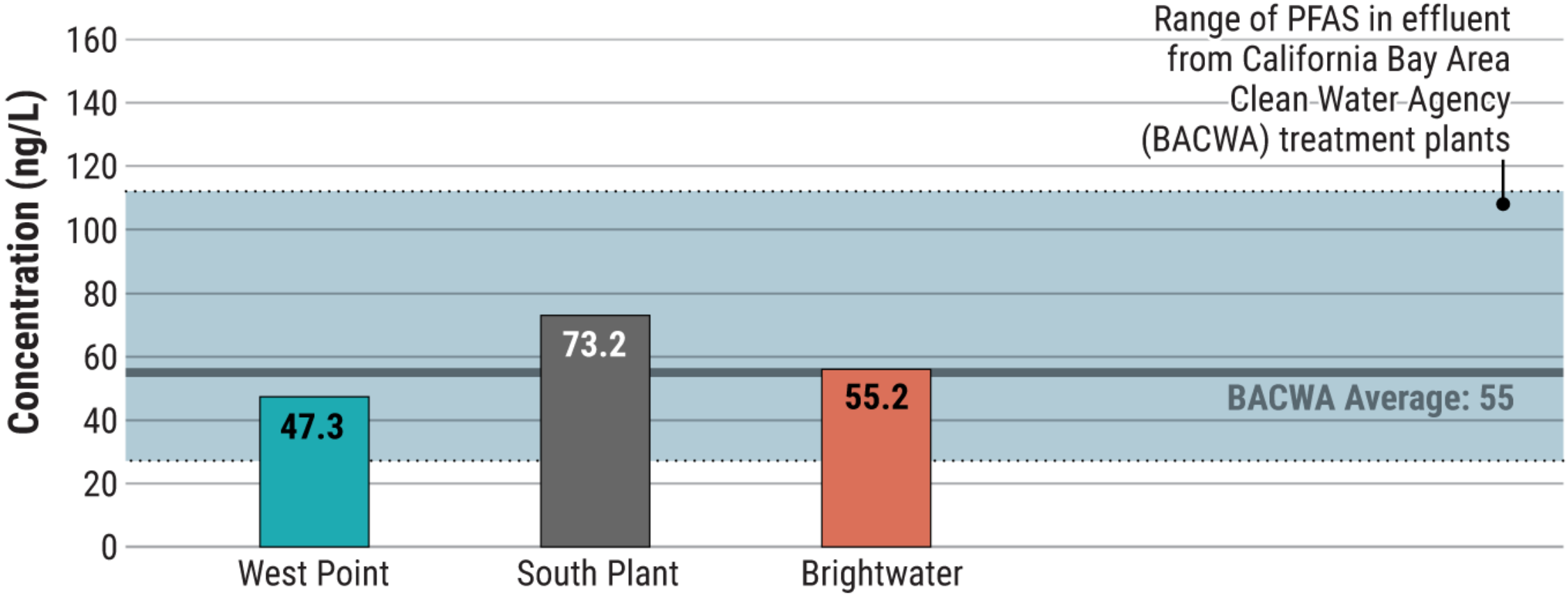
Average PFAS in **wastewater influent**

October 2023 – August 2024



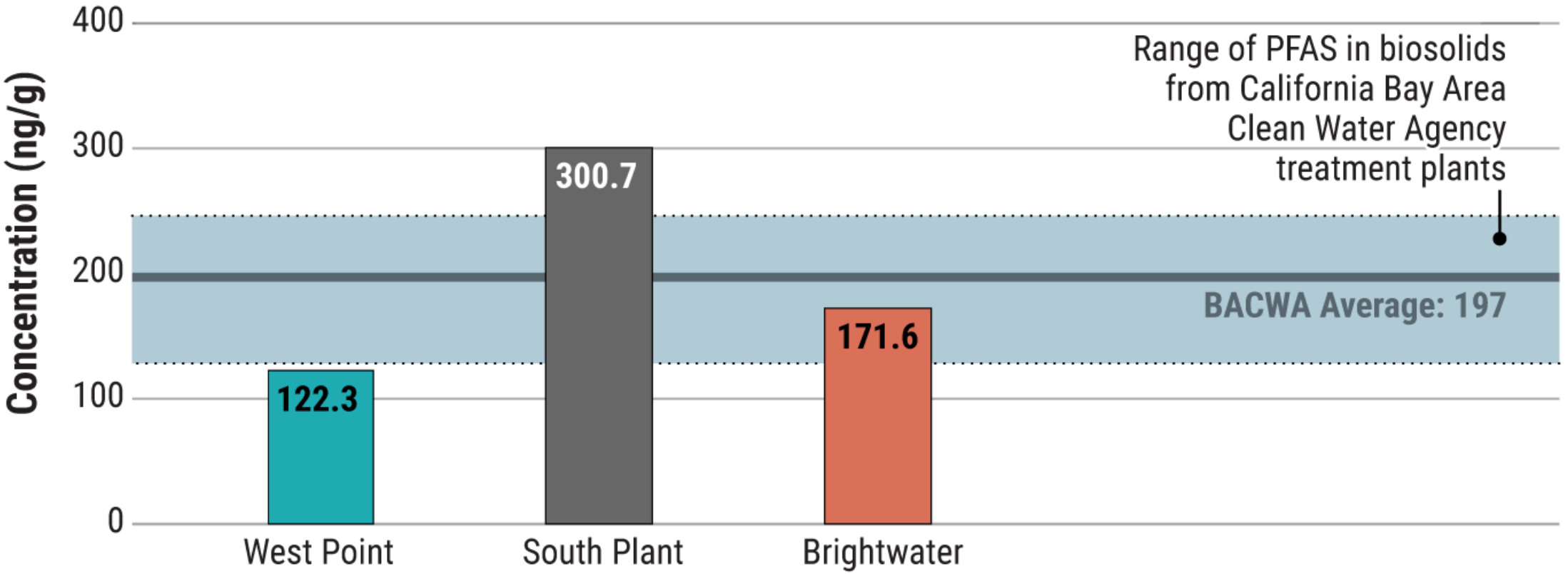
Average PFAS in **wastewater effluent**

October 2023 – August 2024

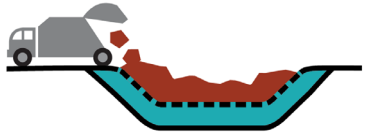


Average PFAS in **biosolids**

October 2023 – August 2024



PFAS in **Cedar Hills landfill leachate**



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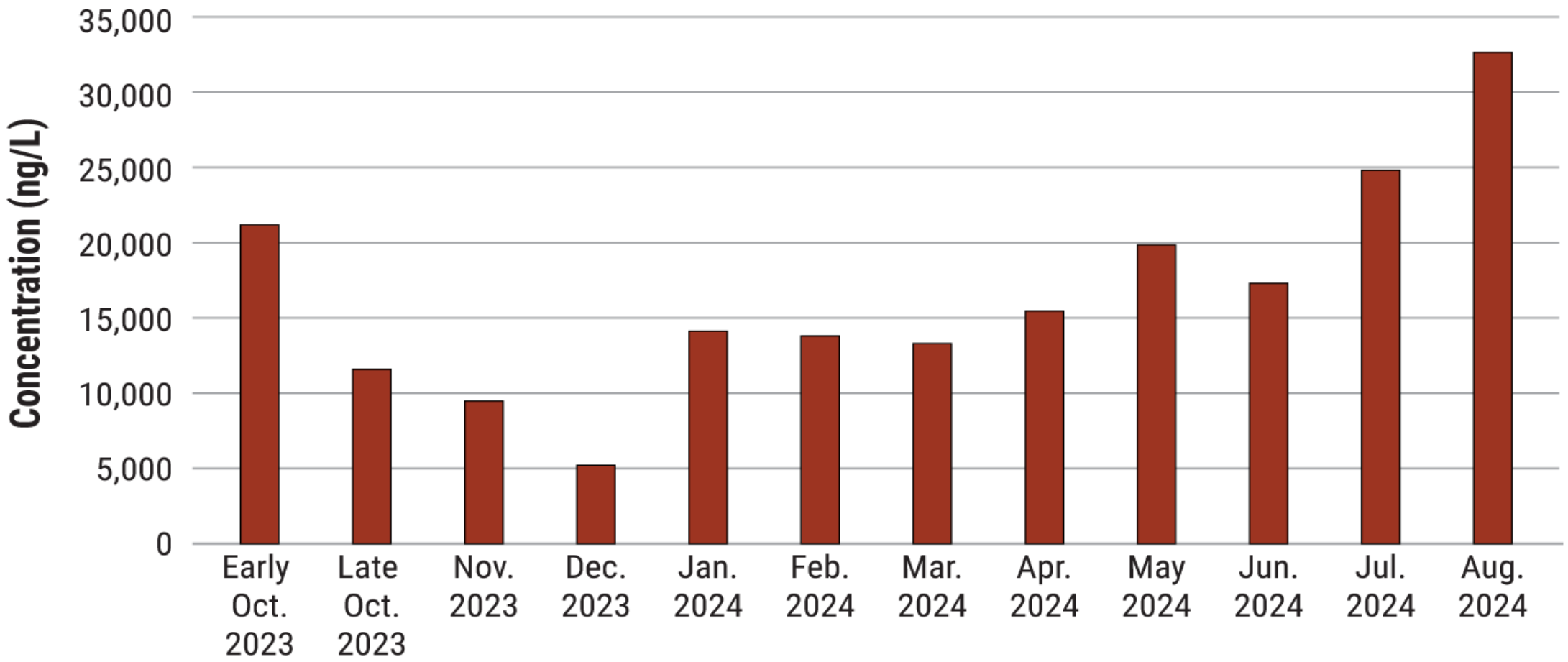

Regulatory comparisons

- Currently no federal and Washington state laws for PFAS in waste streams
- Ongoing efforts to understand risk associated with PFAS
- Other states, including Michigan, have begun to set limits and guidance for PFAS in biosolids

Average PFOS in **biosolids**

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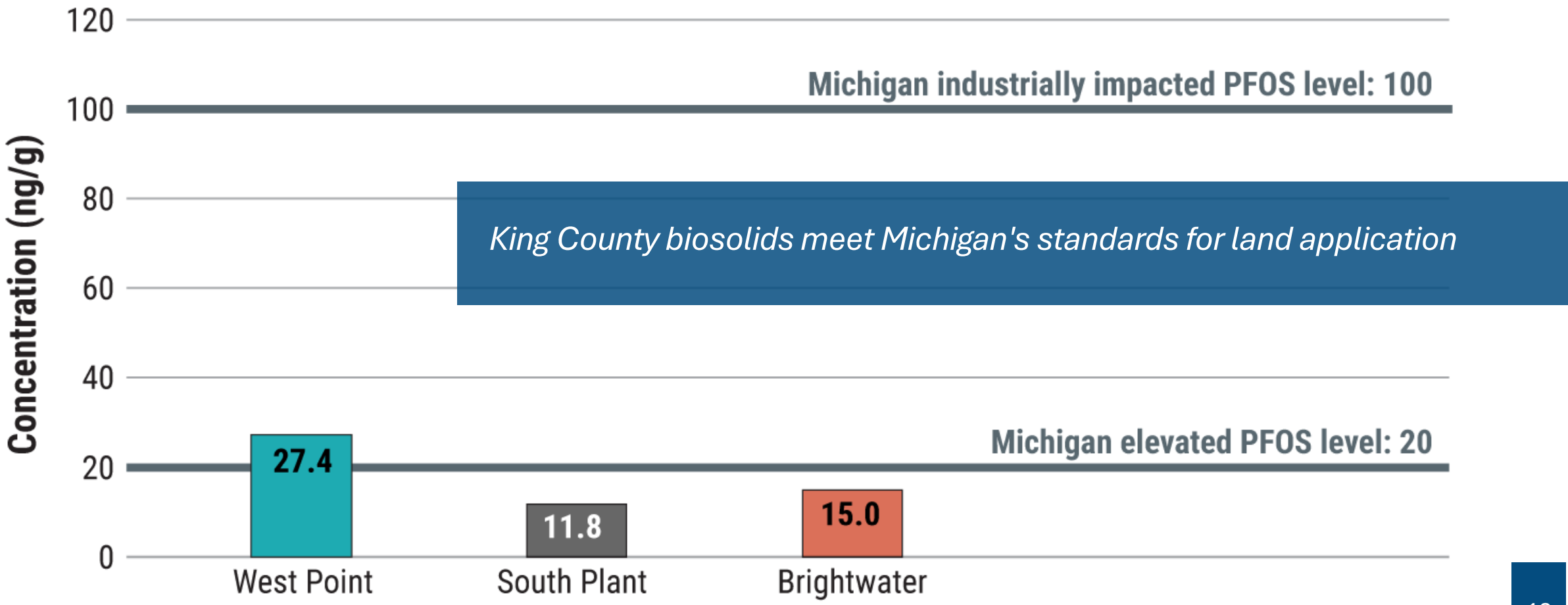
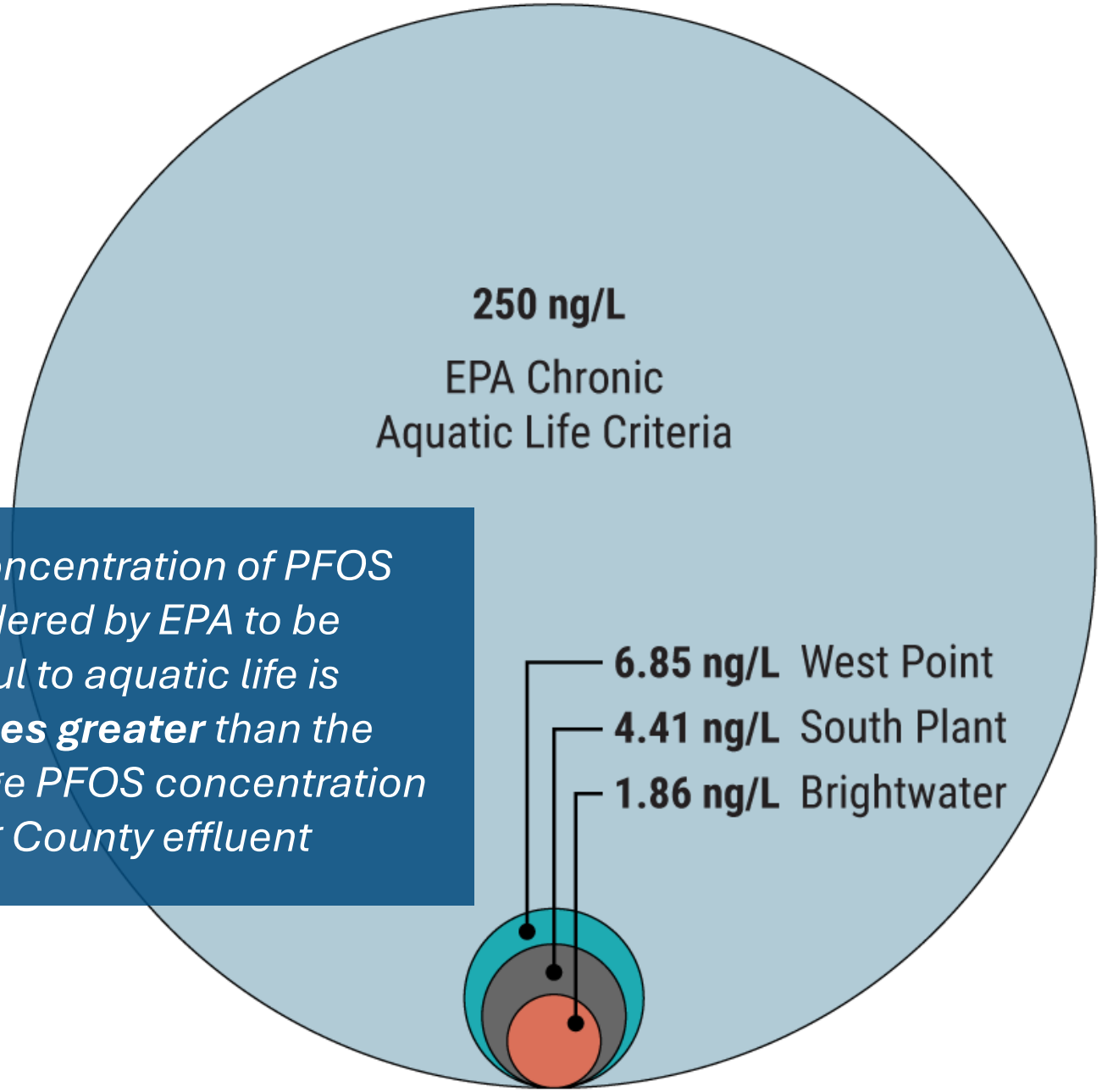


King County biosolids meet Michigan's standards for land application

Aquatic life at **low risk from PFAS** in King County wastewater



*The concentration of PFOS considered by EPA to be harmful to aquatic life is **36 times greater** than the average PFOS concentration in King County effluent*

Takeaways from Public Health – Seattle & King County

- Still studying the human health impacts
- No known health concerns at this time in King County waste systems
- Ways to reduce PFAS exposure

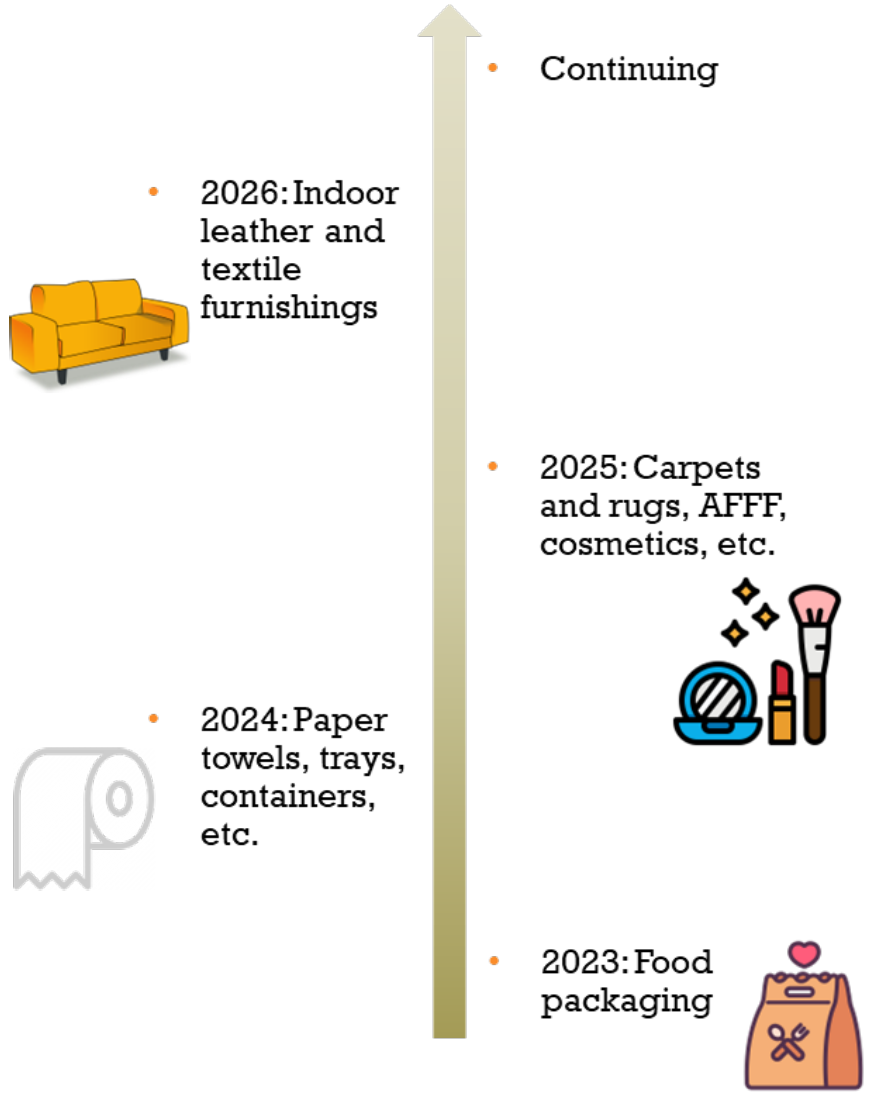
Comic by Public Health—Seattle & King County. Artwork by Amy Camber

Learn more at **KingCounty.gov/PFAS**

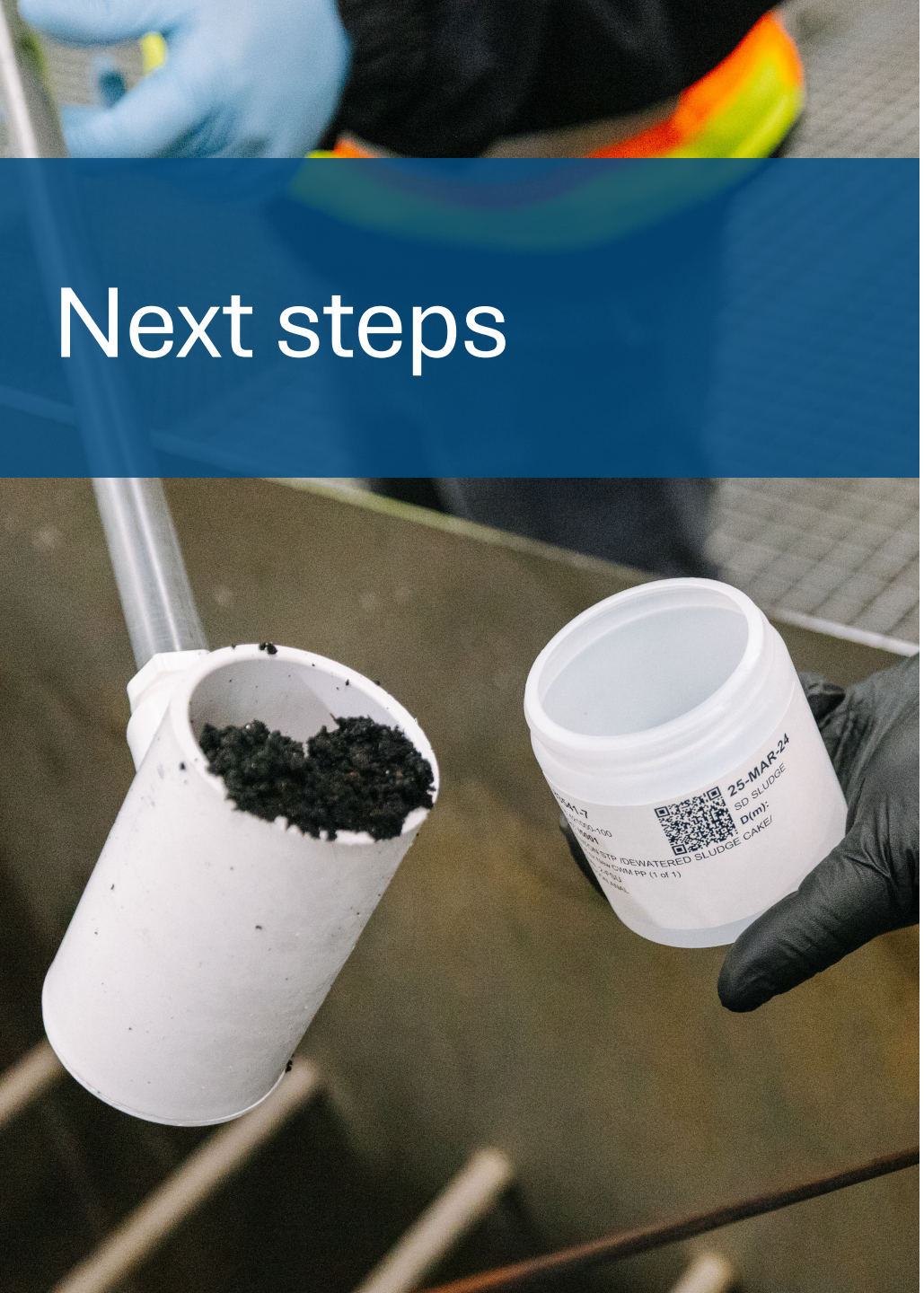
Public Health
Seattle & King County

Regulatory front

- Some product restrictions already in place
  - Fire fighting foam is one of the biggest sources, especially to groundwater wells
  - AFFF takeback program via Ecology
  - SEATAC and KCIA already switched
- Safer products for WA
  - A slower process which requires assessment
- SB5033 requiring testing of PFAS in biosolids
- EPA commitments announced



Next steps



King County will continue to study PFAS in waste systems

- Survey 600+ businesses and industrial dischargers into the wastewater system, including airports
- Examine possible sources of higher levels of PFAS at South Treatment Plant
- Investigate cause of elevated PFOS levels at West Point Treatment Plant
- Work with PHSKC to examine products going into landfill
- Partner with third-party researchers and projects
- Inform regulators, partners, and the public about our findings
- Advocate for controlling upstream sources of PFAS

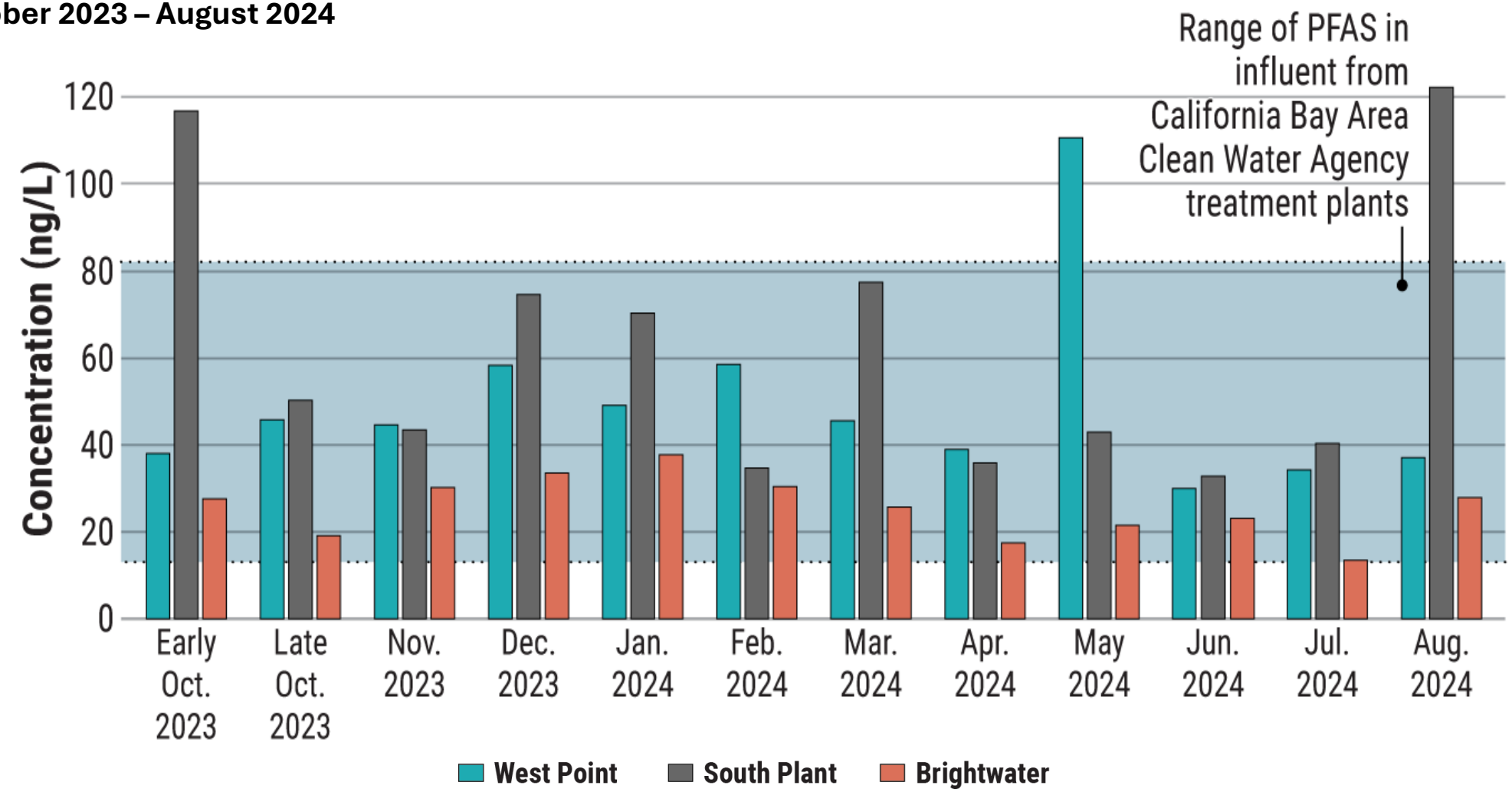
Thank you! Questions?

King County
Department of
Natural Resources and Parks

Public Health
Seattle & King County

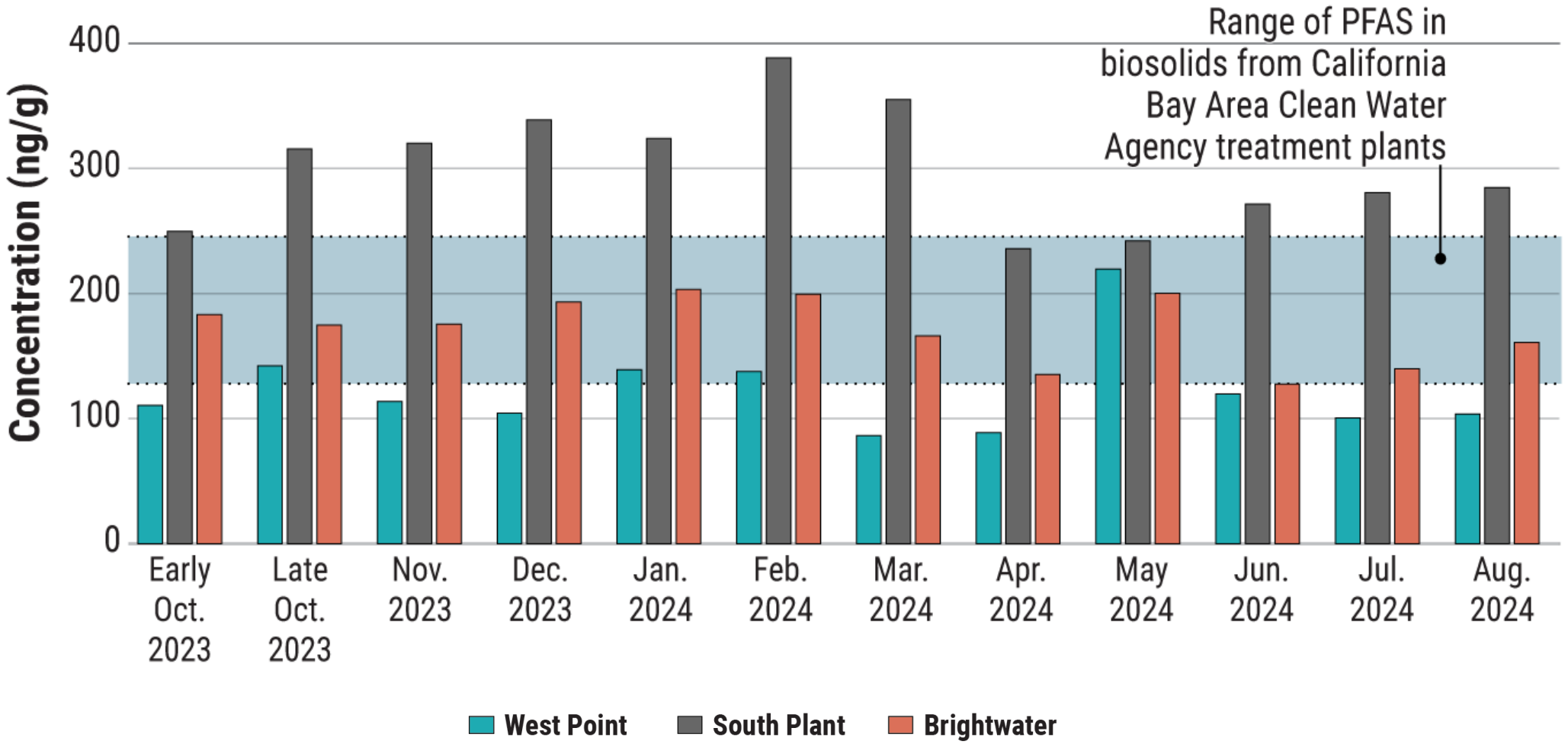
Total PFAS in **wastewater influent**

October 2023 – August 2024

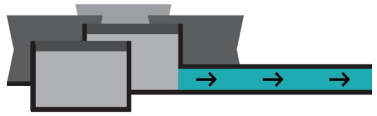


Total PFAS in **biosolids**

October 2023 – August 2024



Total PFAS in **wastewater effluent**



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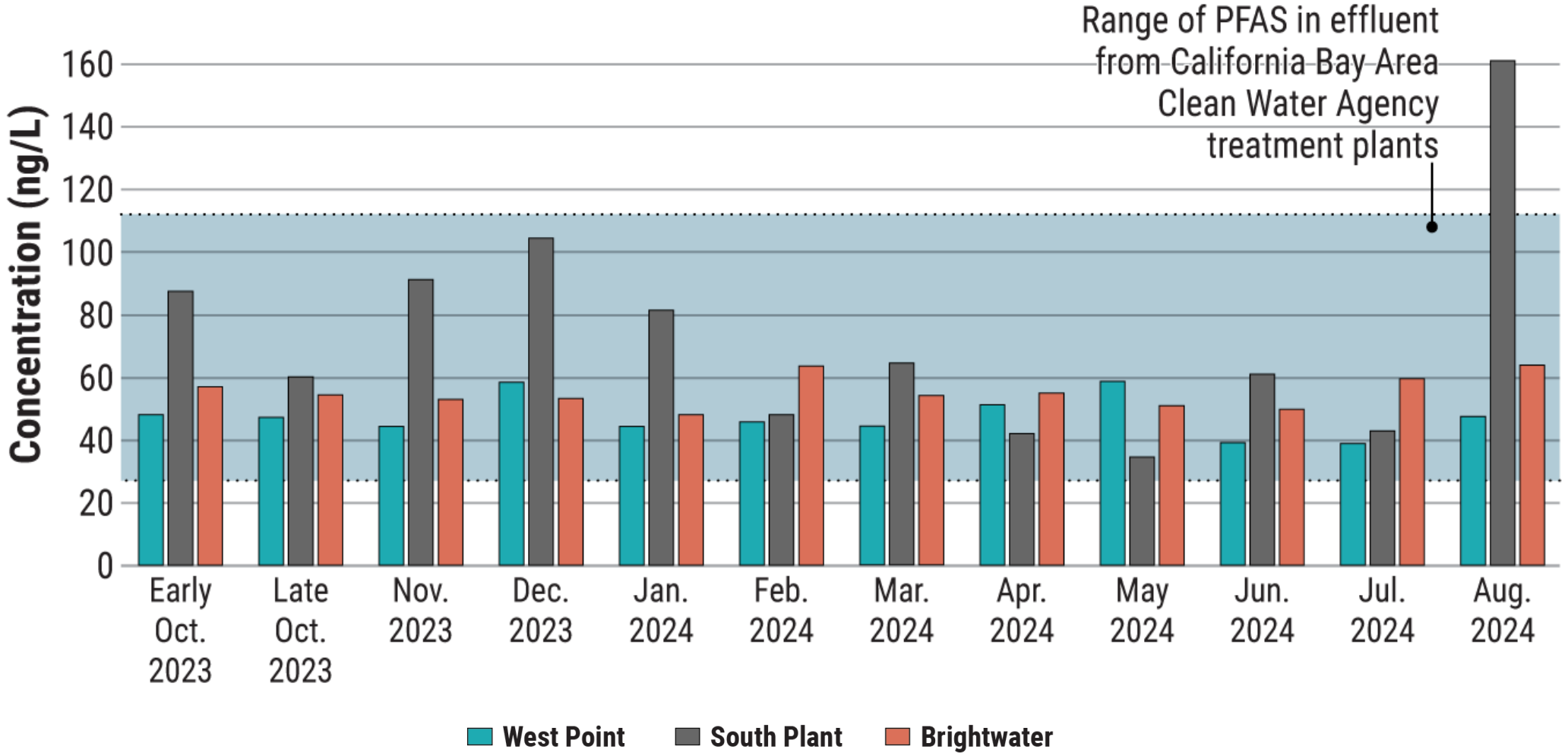

General Hygiene & PFAS Exposure Prevention for Wastewater Workers

Prevent Hand-to-Face Contact:

- Keeping hands below the collar minimizes the risk of accidental ingestion of contaminants.
- Avoid touching the mouth, nose, and eyes to reduce exposure to bioaerosols and contaminants.
- Limit cross-contamination, as contaminants from surfaces, gloves, or tools can transfer to facial areas.

Personal Protective Equipment (PPE):

- Wear protective gloves and remove them before handling clean surfaces or items.
- Use safety glasses, goggles, or face shields to prevent exposure to splashes and mists.
- Utilize N95 or P100 respirators to filter airborne contaminants and minimize inhalation risks.
- Store PPE separately from clean areas to prevent unintended contamination.

Hand Hygiene Protocols:

- Wash hands thoroughly with antimicrobial soap after handling contaminated materials.
- Use alcohol-based sanitizers when handwashing stations are not immediately available.
- Dry hands with disposable towels instead of shared cloths to minimize contamination risks.

Work Zone Hygiene:

- Avoid touching cell phones, pens, or personal items while working in wastewater process areas.
- Establish designated clean zones for food and beverages to prevent contamination.

Personal Hygiene Practices:

- Maintain rigorous handwashing protocols before leaving work areas.
- Prohibit eating and drinking in wastewater process zones to prevent ingestion risks.
- Ensure workers shower, change clothing, and swap work shoes before leaving the facility.

Resources

- Find PFAS-free consumer products

https://pfascentral.org/pfas-free-products/

MAMAVATION | Non-Toxic Products For Healthy Families

- WA drinking water: DOH drinking water dashboard
- WA fish advisories: https://doh.wa.gov/community-and-environment/food/fish/advisories

- More information:

https://www.youtube.com/watch?app=desktop&v=P6WfpWnIpLc

https://doh.wa.gov/community-and-environment/contaminants/pfas