

# Testing PFAS in King County's Waste Systems

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Sampling results for 2023-2024

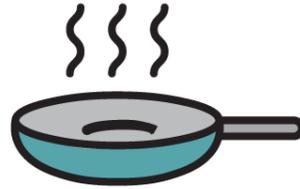
**Erika Kinno**

Resource Recovery Policy & Research Supervisor

June 2025

# Sources of PFAS

*Wastewater & treatment plants are **not** the source of PFAS*



Nonstick Cookware



Stain-proof Furniture



Personal care products



Firefighting Foams



Fast food Packaging



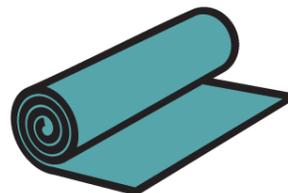
Microwave Popcorn bags



Water-resistant Clothing



Stain-resistant products



Carpet



Cosmetics

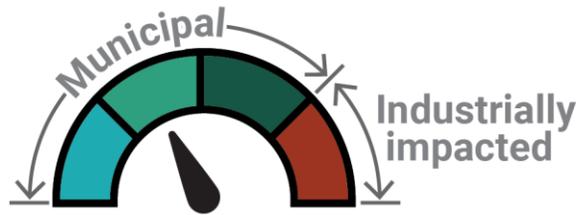


Paint



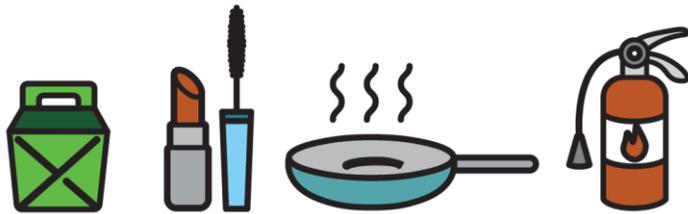
Pesticides

# Top results



## Wastewater

Similar to average municipal systems



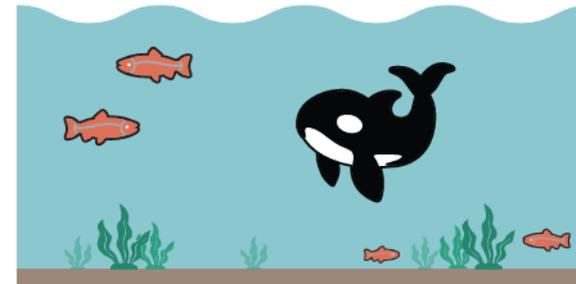
## Diffuse sources

Likely coming from everyday products put in drains and trash



## Landfill leachate

Magnitudes higher concentration than wastewater



## Aquatic life

Effluent remains protective of aquatic life

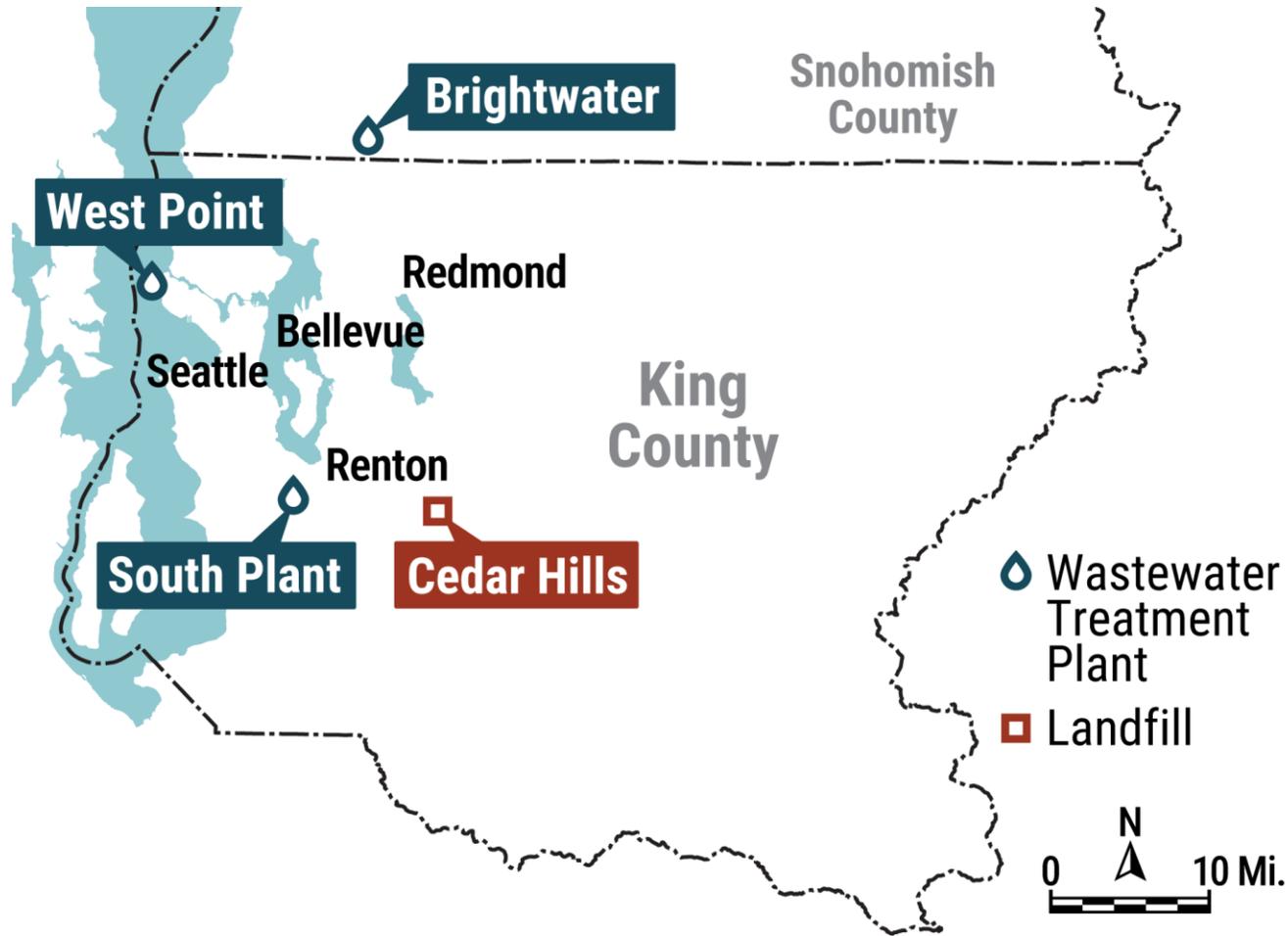
# What King County is doing

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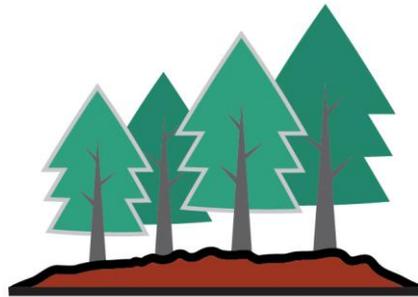
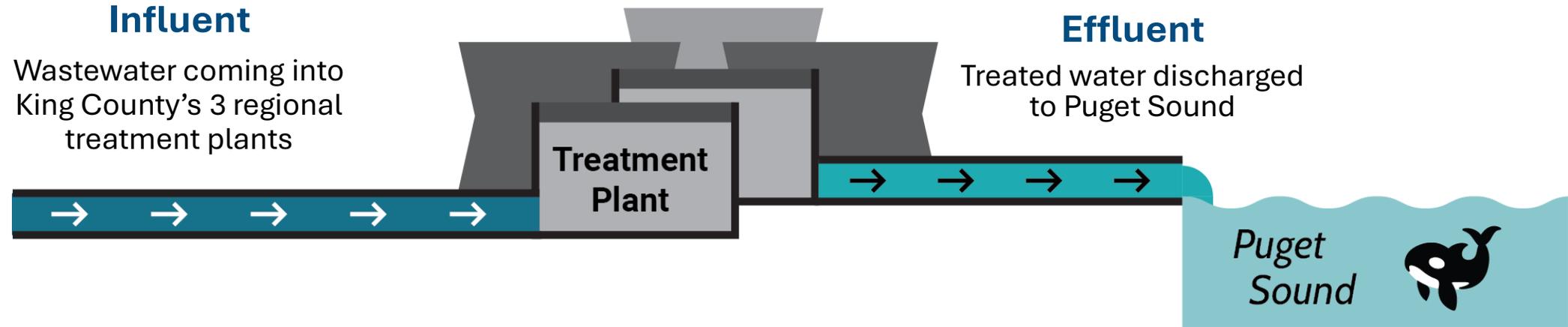
- Promote source control
- Pursue legal action against PFAS producers
- Work with local, state, and federal agencies
- Measure PFAS levels in our environment and in our waste streams



# Where King County tested

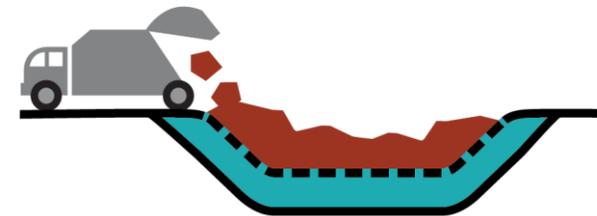


# What King County tested



## Biosolids

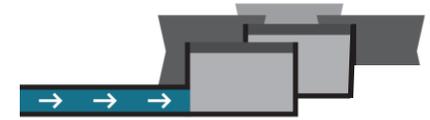
*Fertilizer replacement produced from highly treated organics present in wastewater*



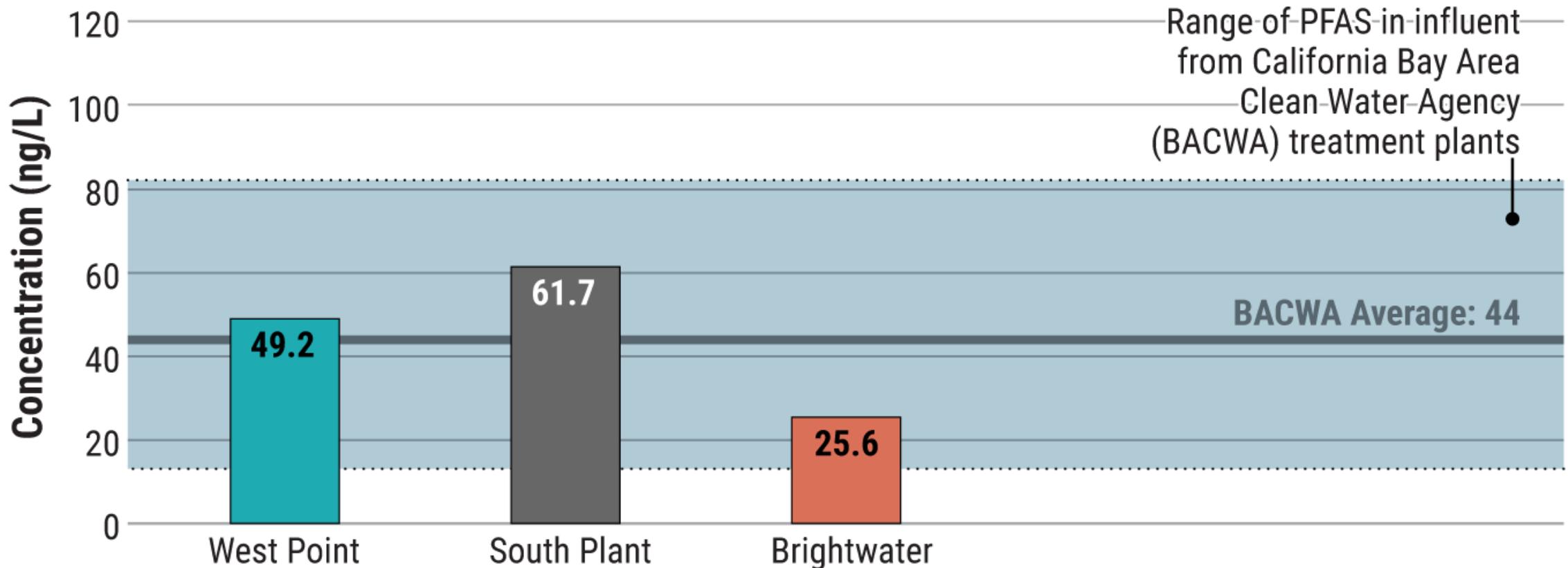
## Landfill leachate

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

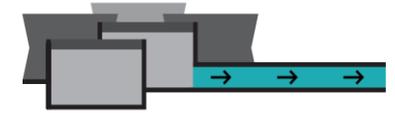
# Average PFAS in wastewater influent



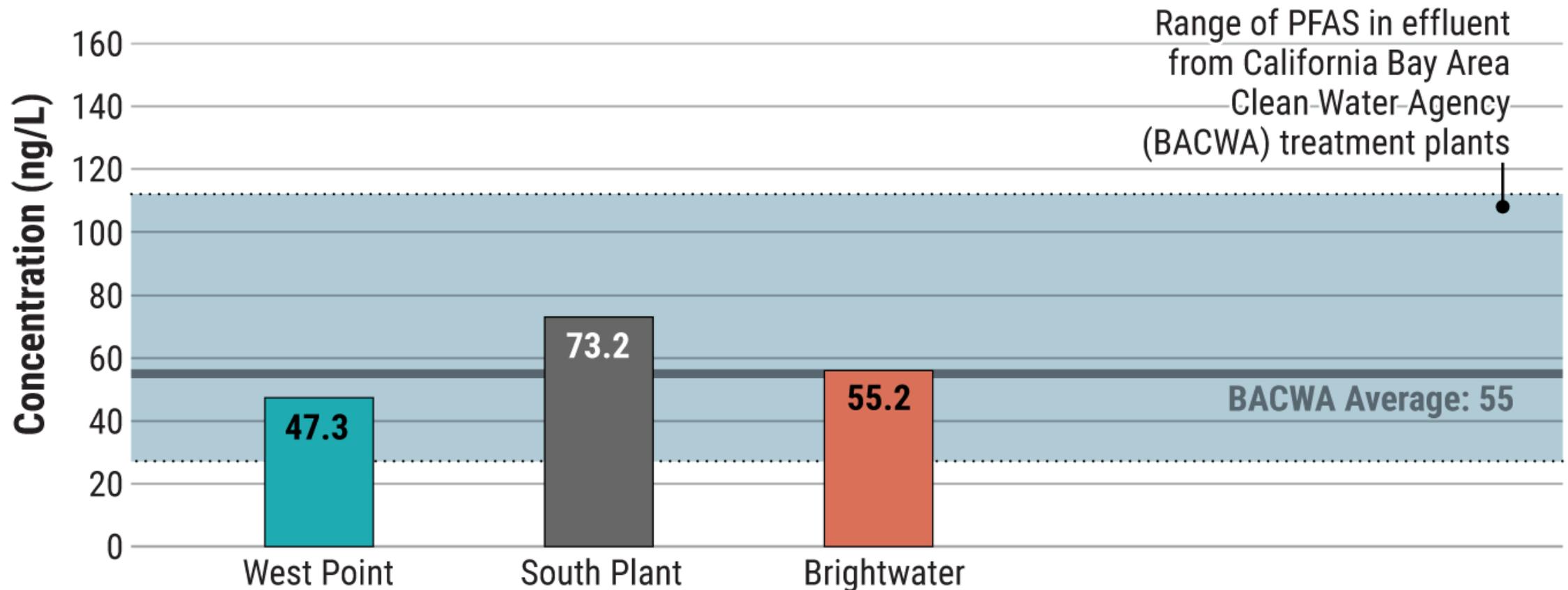
October 2023 – August 2024



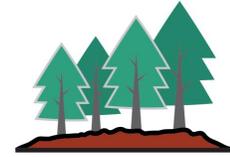
# Average PFAS in wastewater effluent



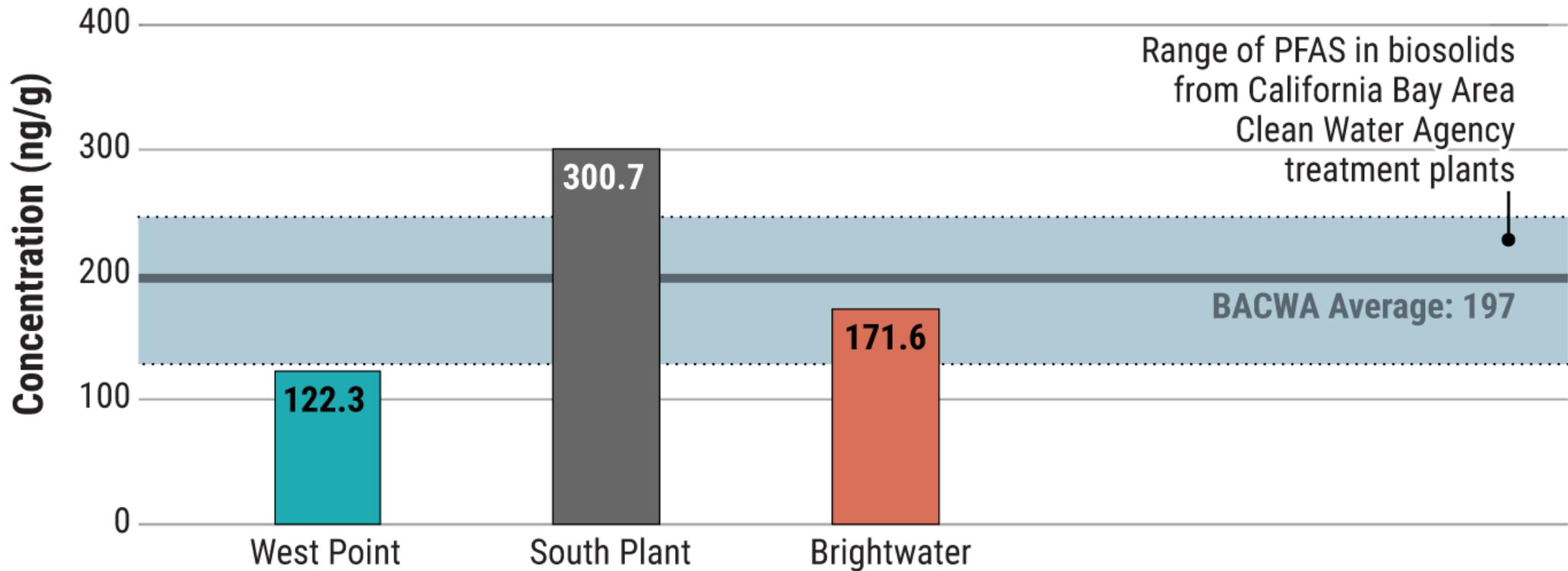
October 2023 – August 2024



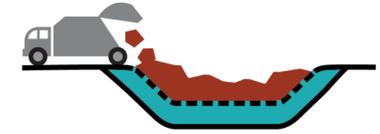
# Average PFAS in biosolids



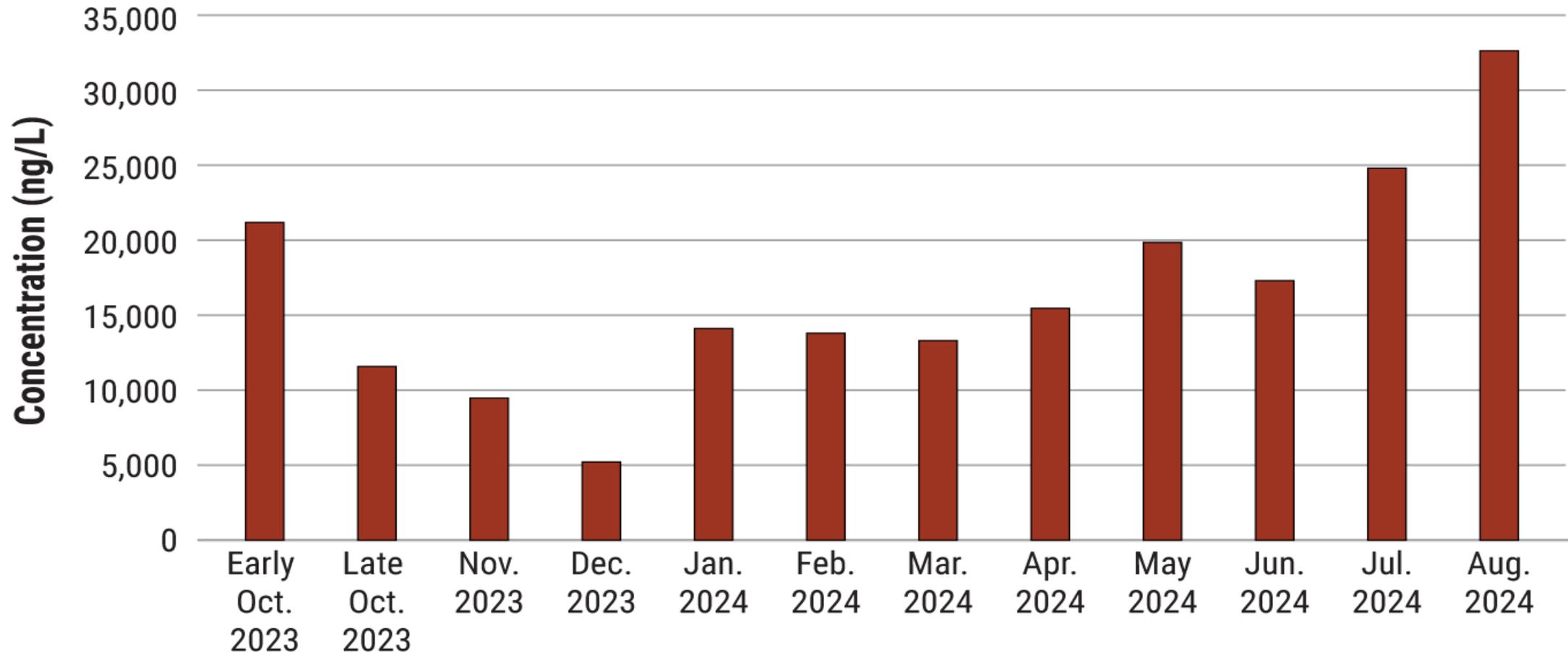
October 2023 – August 2024



# PFAS in Cedar Hills landfill leachate



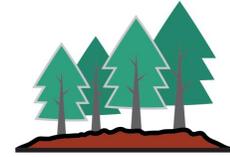
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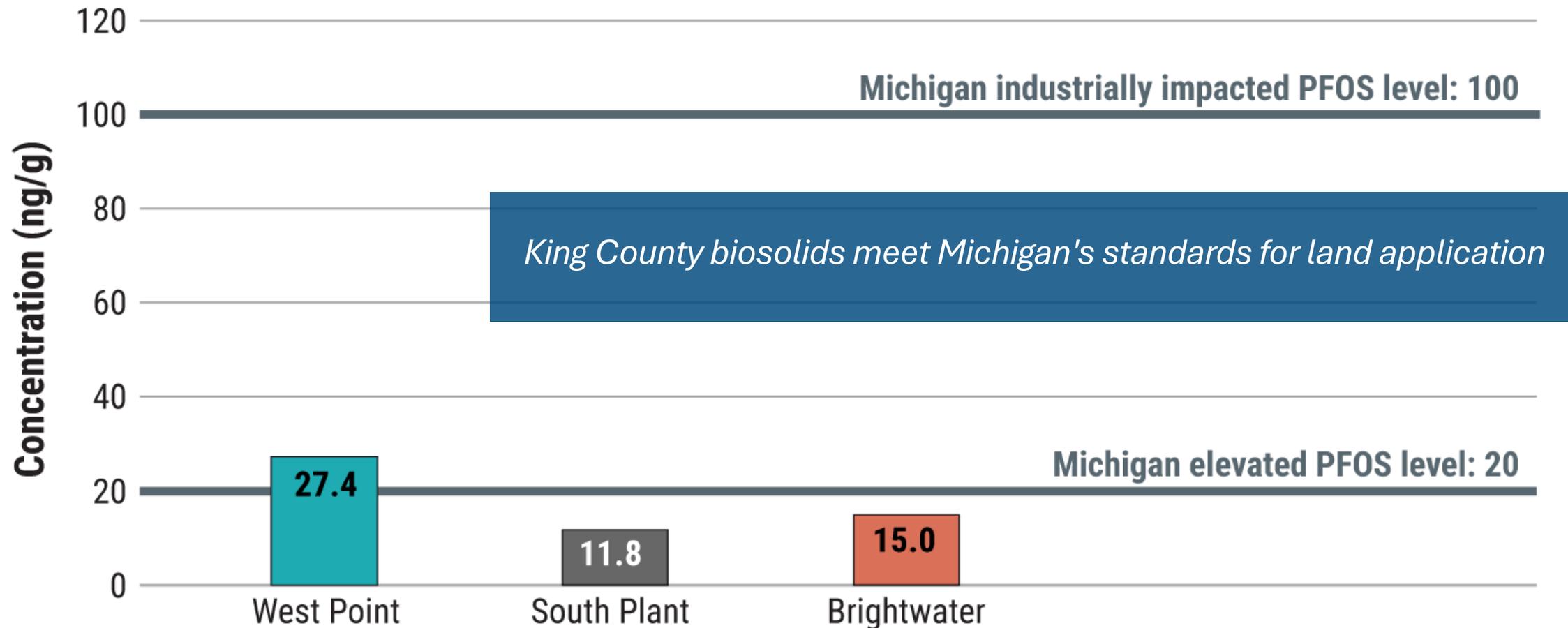
# Regulatory comparisons

- 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

# Average PFOS in biosolids



October 2023 – August 2024

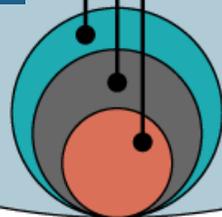


# Aquatic life at low risk from PFAS in King County wastewater

250 ng/L  
EPA Chronic  
Aquatic Life Criteria

*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*

6.85 ng/L West Point  
4.41 ng/L South Plant  
1.86 ng/L Brightwater



# Takeaways from Public Health – Seattle & King County

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



THERE ARE SO MANY PFAS THAT WE DON'T KNOW ALL OF THEIR EFFECTS ON PEOPLE, BUT THE DATA WE HAVE SHOWS THEY ARE VERY HARMFUL.

PFAS ARE LINKED TO:

- INFERTILITY
- PROSTATE, KIDNEY AND TESTICULAR CANCER
- INCREASES TO CHOLESTEROL AND OBESITY



HOW CAN WE REDUCE EXPOSURE TO **PFAS**?



It's hard to tell what has PFAS in it.

It could be in anything that's labeled as waterproof, grease-proof, stain-proof, or non-stick.

**DR. SHIRLEE TAN**  
TOXICOLOGIST



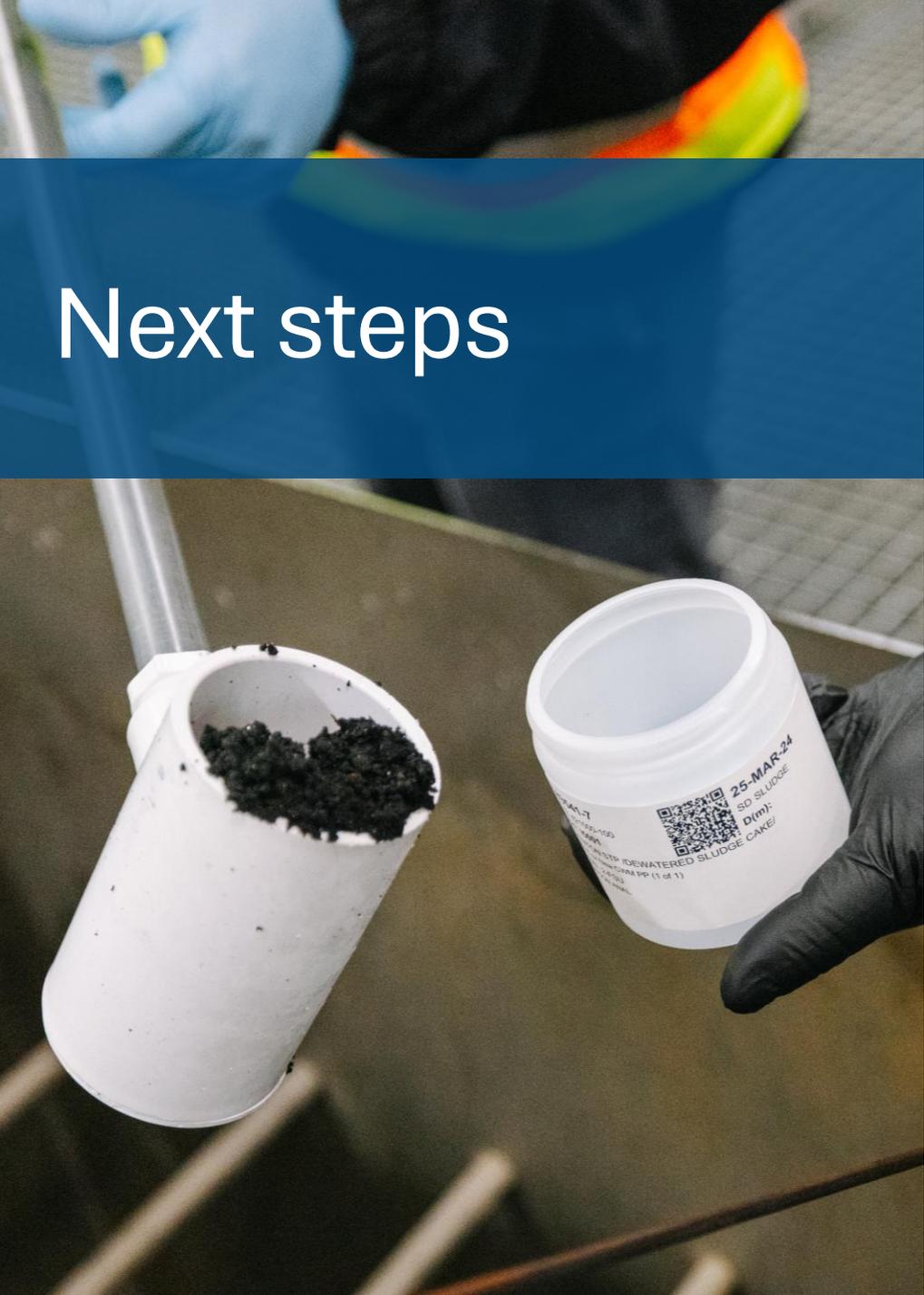
**WHEN YOU SHOP**

- CHOOSE PRODUCTS THAT CLEARLY STATE THEY ARE "FLUORINE-FREE" OR "PFC OR PFAS-FREE"
- AVOID PRODUCTS THAT ARE LABELED AS WATER OR STAIN RESISTANT
- LOOK FOR THE "SAFER CHOICE" LOGO ON CLEANING PRODUCTS



**BUT IT'S NOT HOPELESS.**

We can reduce our exposure even if we can't escape PFAS. That gives our bodies a chance to cycle them out. And that will make a difference to our health.



# Next steps

## King County will continue to study PFAS in waste systems

- Survey 600+ businesses and industrial dischargers into the wastewater system
- Examine possible sources of higher levels of PFAS at South Treatment Plant
- Investigate cause of elevated PFOS levels at West Point Treatment Plant
- 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

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**King County** | Wastewater Treatment

# Q & A



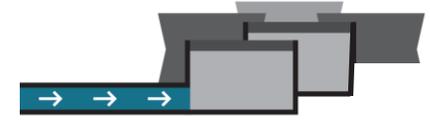
King County | Wastewater Treatment



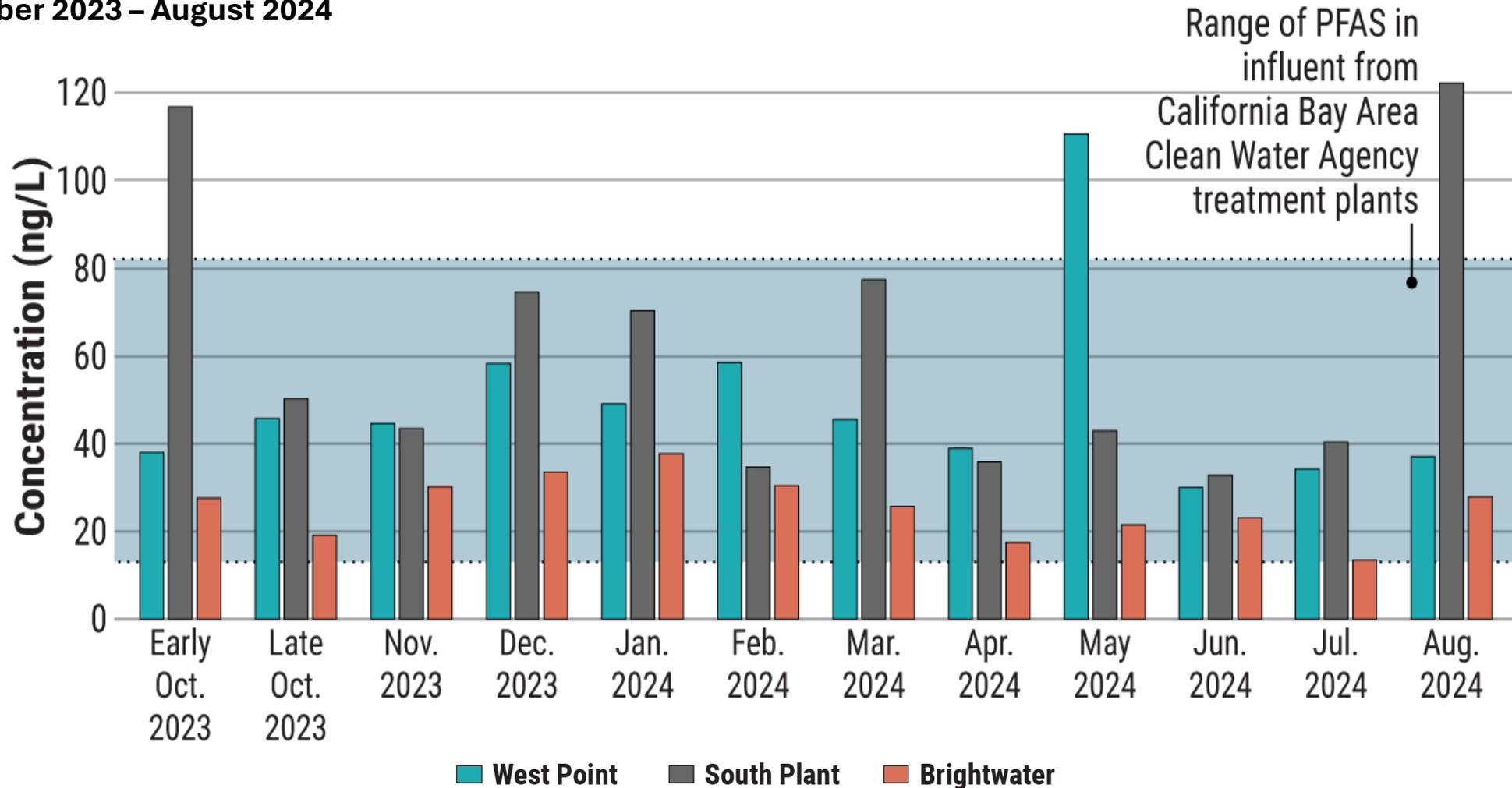
**King County**

**Wastewater  
Treatment**

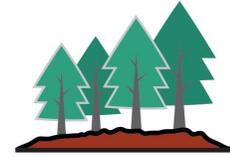
# Total PFAS in wastewater influent



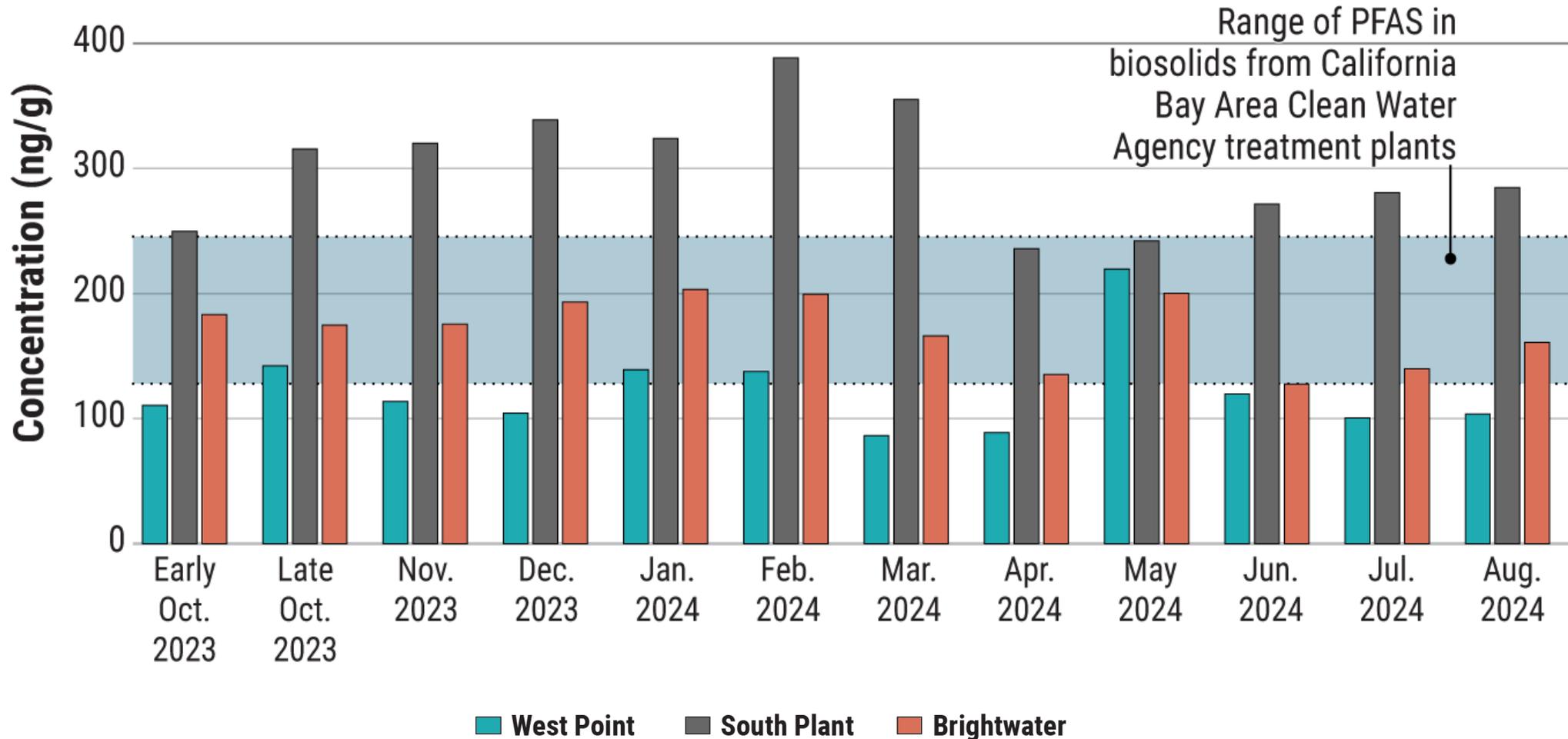
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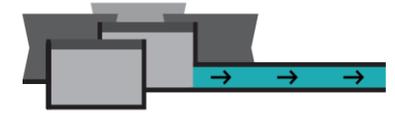
# Total PFAS in biosolids



October 2023 – August 2024



# Total PFAS in wastewater effluent



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