MINUTES
WATER RESOURCES COMMITTEE

Tuesday, April 30, 2024, at 9:00 a.m.
UNITED WATER CONSERVATION DISTRICT
Boardroom, 1701 N. Lombard Street, Oxnard CA 93030

OPEN SESSION
The meeting was called to order at 9:05 a.m.

ROLL CALL
Two committee members were present (Kimball and Hasan). One seat is currently vacant.

1. **Public Comment**
   No public speakers.

2. **Approval of Minutes**
   Motion

   Action: M/S/C (Kimball, Hasan) to approve the March 5, 2024, minutes.

   Vote: Ayes: Kimball and Hasan; Noes: None; Absent: None

3. **Summary and Update on District Surface Water Conditions (Dr. Bram Sercu)**
   Senior Hydrologist Bram Sercu presented a summary of reservoir releases and diversions to date during water year 2024 and provided an update on current hydrologic conditions in the Santa Clara River watershed (presentation attached).

   Director Hasan asked about the composition of silt in our basins. Dr. Bram explained how diversions play a role in whether silt can make its way into our recharge basin and how the use of flocculent could maximize settling. Water Resources Supervisor John Lindquist added that sediment is frequently misidentified as clay.

4. **Overview of Federal (EPA) Final National Primary Drinking Water Regulation for Six Per- and Polyfluoroalkyl Substances (PFAS) dated April 10, 2024, and Relevance to United Water Conservation District's Operations (Kathleen Kuepper)**
   Hydrogeologist Kathleen Kuepper presented an overview of key elements of the new EPA regulations for PFAS compounds, detections of PFAS in the Forebay area of the Oxnard Basin, and relevance of the new regulations to operation of United's El Rio well field and OH water-supply system.

   Director Kimball asked about the PFAS compound limits of four parts per trillion and what the reasonable errors were on a lab sample. Further discussion ensued on what would occur if detected concentrations were to exceed the Maximum Contaminant Level (MCL) of 4 nanograms per liter and how this would trigger a public notice of contamination and the removal/treatment of the contaminated water source. Dr. Bral noted that Reverse Osmosis

and Ion Exchange were proven methods of treating PFAS. Chris Coppinger added a public notice followed by removal/treatment would be standard procedure if exceedances of PFAS MCLs were detected.

5. **Water Resources Department and GSA Activities Update (John Lindquist)**
Water Resources Supervisor Lindquist presented the department updates.

Mr. Lindquist asked for feedback from the Committee on what to present to the Board. Director Hasan would like to see a condensed version of Ms. Kuepper's presentation go to the full Board.

FUTURE AGENDA ITEMS

No future agenda items.

ADJOURNMENT

The meeting was adjourned at 10:00 a.m.

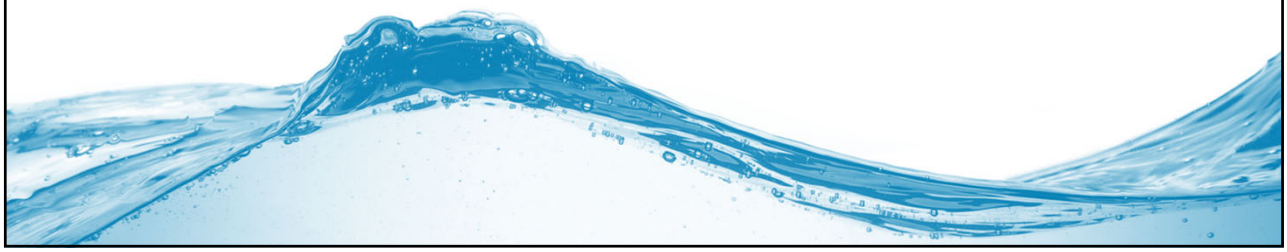
I certify that the above is a true and correct copy of the Minutes of the Water Resources Committee Meeting of April 30, 2024.

ATTEST: Mohammed Hasan
Mohammed A. Hasan, Director

United Water CONSERVATION DISTRICT

3. SUMMARY AND UPDATE ON DISTRICT SURFACE WATER CONDITIONS

Presented by: Bram Sercu, Senior Hydrologist
Water Resources Committee Meeting
April 30, 2024



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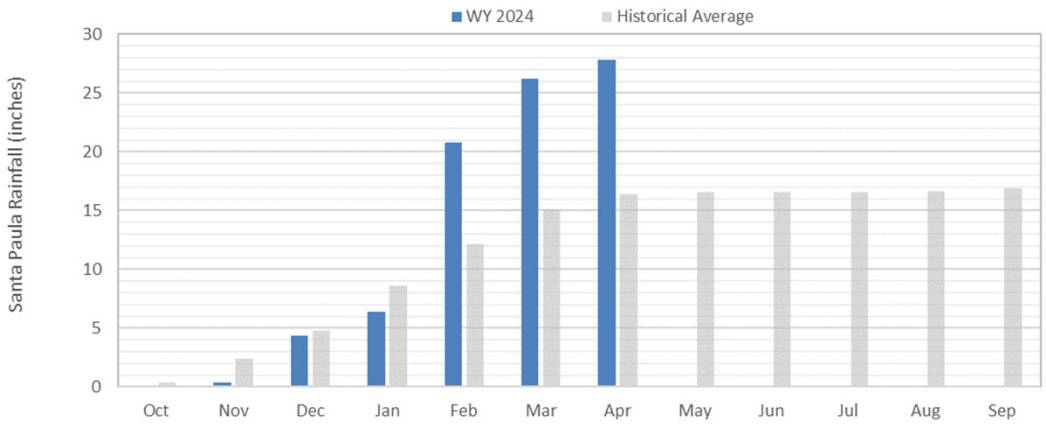
Seasonal Rainfall



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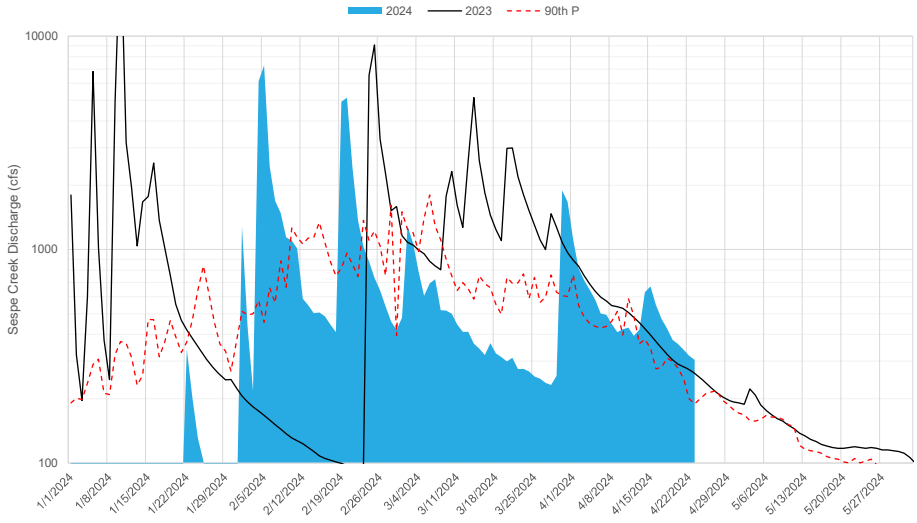
Watershed Conditions



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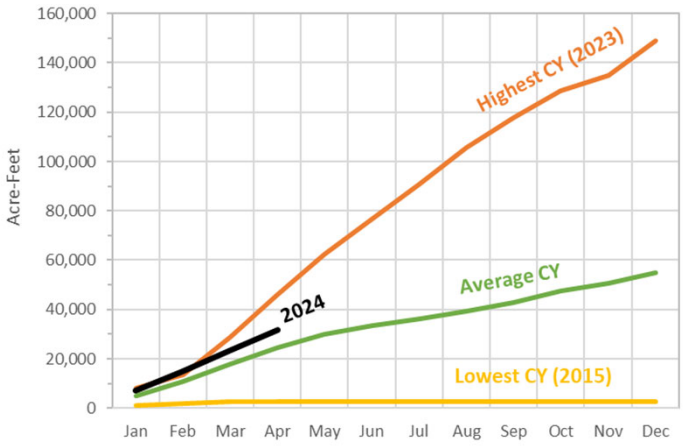
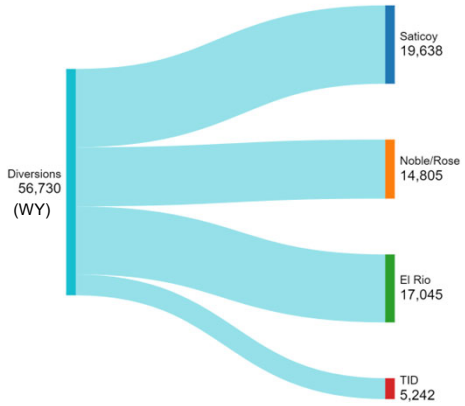
2024 Diversions





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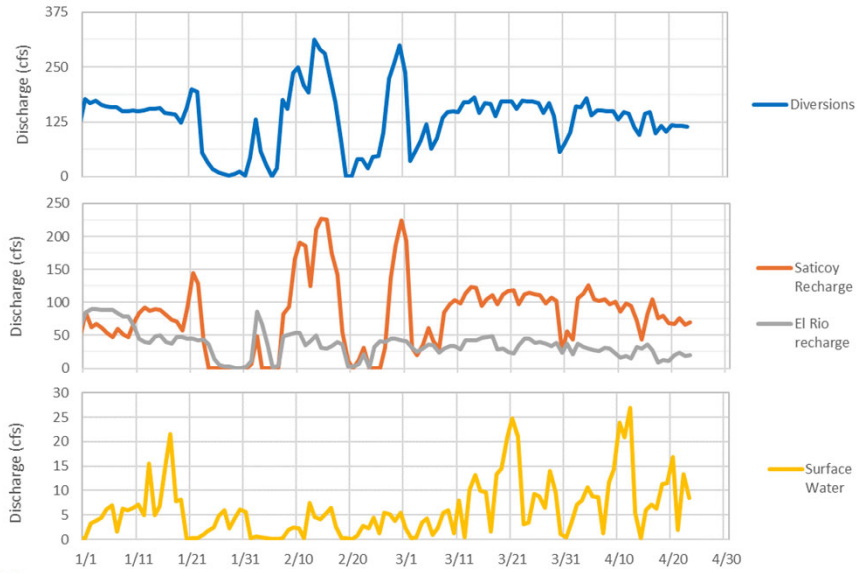
Jan-April Operations Summary



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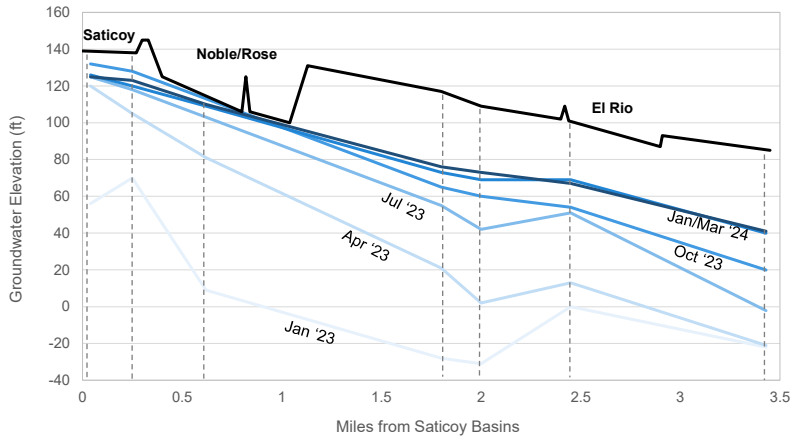
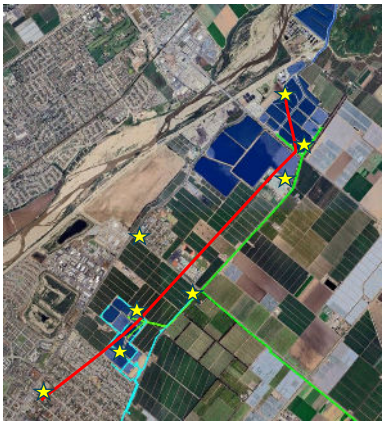
Forebay Groundwater Depth





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Saticoy Basin Levels

CreationD...	A (ft)	C (ft)	D (ft)	E (ft)	F (ft)	G (ft)	H (ft)	I (ft)	J (ft)	L (ft)	M (ft)	N (ft)	O (ft)	N1 (ft)	N2 (ft)	N3 (ft)
4/17/2024...	3.80	0.00	2.50	1.10	4.80	5.60	5.00	1.00	0.00	7.20	3.60	1.30	5.80	5.30	10.20	18.90
4/16/2024...	2.40	0.00	2.60	1.10	4.40	5.40	5.00	0.00	0.00	7.30	3.70	1.00	5.70	4.80	10.20	18.90
4/15/2024...	2.60	0.00	2.30	1.10	4.20	5.30	4.60	0.00	0.00	7.30	3.70	1.00	5.50	4.70	10.30	18.80
4/13/2024...	1.70	0.00	2.60	1.20	4.60	5.70	5.10	1.00	0.00	7.70	3.70	1.40	6.00	5.10	10.40	18.80
4/12/2024...	1.20	0.00	2.80	1.20	4.70	5.70	5.10	1.00	0.00	7.70	3.80	1.40	5.80	5.20	10.40	18.80
4/11/2024...	2.50	0.50	2.60	1.20	4.60	5.60	5.00	0.70	1.30	7.10	3.70	1.40	5.60	5.30	10.40	18.80
4/10/2024...	2.50	1.80	3.00	1.40	4.80	5.60	4.70	0.80	1.60	6.70	3.80	1.60	5.60	5.40	10.40	18.90
4/8/2024, ...	2.10	2.60	2.50	1.00	4.30	5.10	4.60	1.00	2.50	6.50	3.60	0.50	5.50	5.20	10.30	18.60
4/7/2024, ...	1.80	2.60	2.40	1.00	4.30	4.80	4.50	1.00	2.60	6.40	3.60	0.50	5.30	5.20	10.40	18.80

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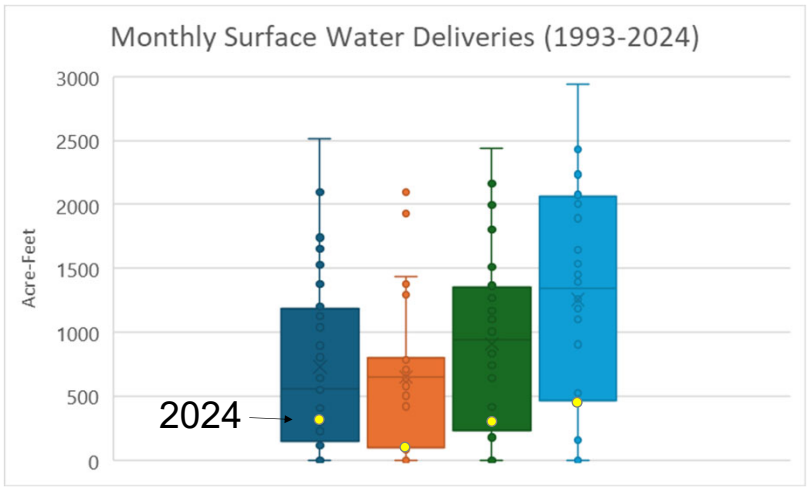
Surface Water Deliveries



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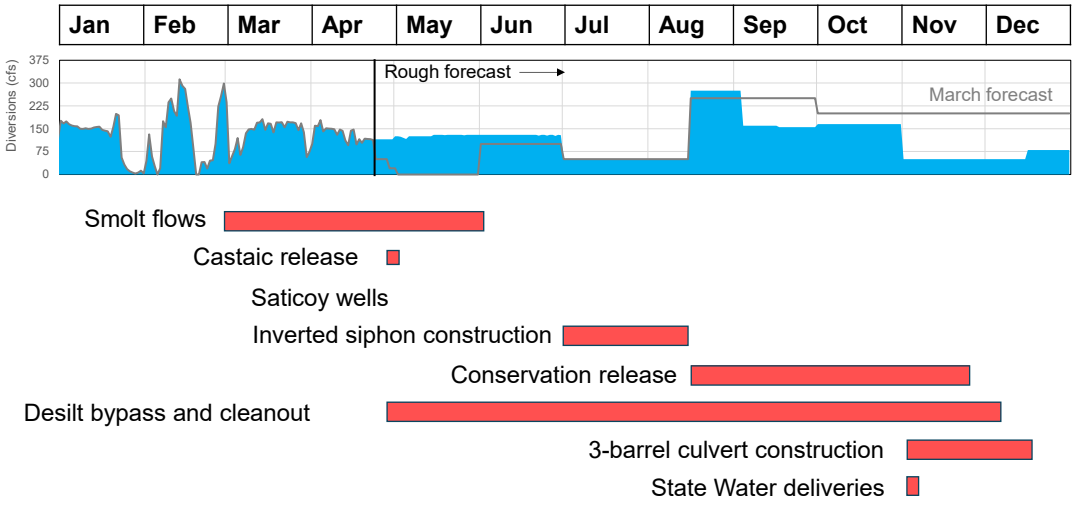
WY 2024 Planning*



*Tentative approximate schedule for planning purposes

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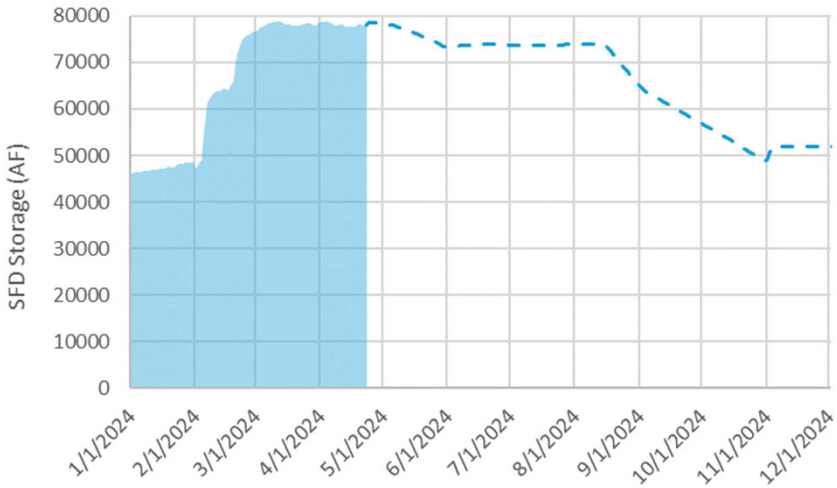
Lake Piru Storage Forecast



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Questions?

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Overview of Federal (EPA) Final National Primary Drinking Water Regulation for Six Per- and Polyfluoroalkyl Substances (PFAS) dated April 10, 2024, and Relevance to United Water Conservation District's Operations

Presented by: Kathleen Kuepper

Water Resources Committee Meeting

April 30, 2024

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Outline

PFAS Background
- Introduction
- Uses and Exposure
- Health Risks and Concentration Data in People

PFAS Regulations
- California (State Water Resources Control Board, DDW)
- Federal (EPA) National Primary Drinking Water Regulation

PFAS Data
- Local
- United Water Conservation District

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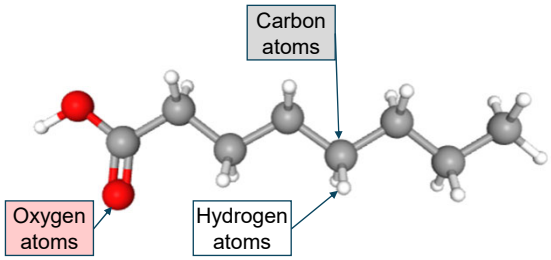
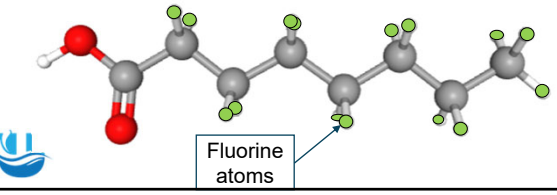
What are PFAS Compounds?
(per- and polyfluoroalkyl substances)

Perfluorooctanoic acid (PFOA) as an example:



Structurally identical to octanoic (aka, caprylic) acid, which is a straight-chain fatty acid found naturally in coconuts and breast milk in many mammals.

Electrochemical fluorination or telomerization



Replace all but one hydrogen atom with fluorine atoms (does not occur in nature).

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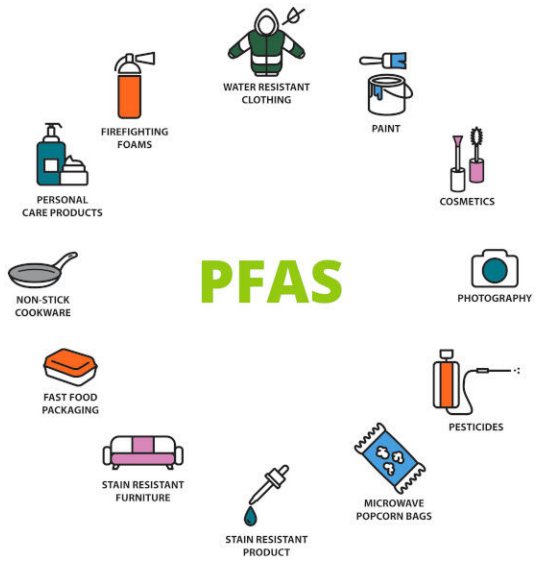
Why Were PFAS Produced?
(And where can they be found?)



Major Issues

1) "Forever Chemicals"
Do not naturally degrade in the environmental over time

2) Some can accumulate within the human body

3) Are toxic to human life at low concentrations

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How are People Exposed to PFAS?

(from the U.S. Agency for Toxic Substances and Disease Registry)

drinking water from PFAS-contaminated municipal sources or private wells

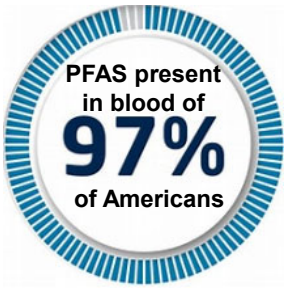
eating fish caught from water contaminated by PFAS (PFOS, in particular)

accidentally swallowing or breathing contaminated soil or dust

eating food (e.g., meat, dairy, and vegetables) produced near places where PFAS were used or made

eating food packaged in material that contains PFAS

accidentally swallowing residue or dust from consumer products containing PFAS such as stain resistant carpeting and water repellent clothing



U.S. Centers for Disease Control and Prevention (2015 study)

(https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4483690/)

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What are the Health Effects of PFAS?

(from the U.S. Agency for Toxic Substances and Disease Registry)

Increases in cholesterol levels (PFOA, PFOS, PFNA, PFDA)

Changes in liver enzymes (PFOA, PFOS, PFHxS)

Small decreases in birth weight (PFOA, PFOS)

Lower antibody response to some vaccines (PFOA, PFOS, PFHxS, PFDA)

Pregnancy-induced hypertension and preeclampsia (PFOA, PFOS)

Kidney and testicular cancer (PFOA)

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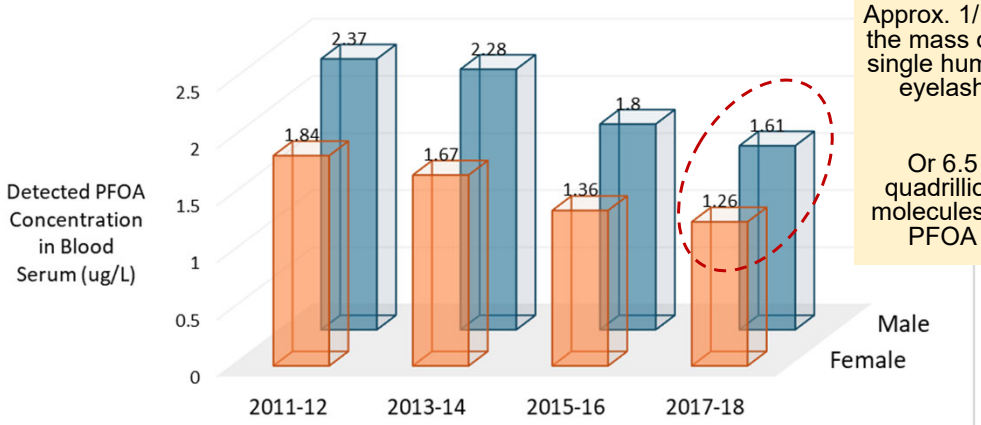
How Much PFAS is Inside of Us?

(from U.S. Centers for Disease Control and Prevention, https://www.cdc.gov/exposurereport/data_tables.html)

Changes in geometric-mean blood-serum concentrations of PFOA in U.S. residents from 2011 through 2018



Approx. 1/10th the mass of a single human eyelash

Or 6.5 quadrillion molecules of PFOA

PFOA concentrations are decreasing in U.S. residents

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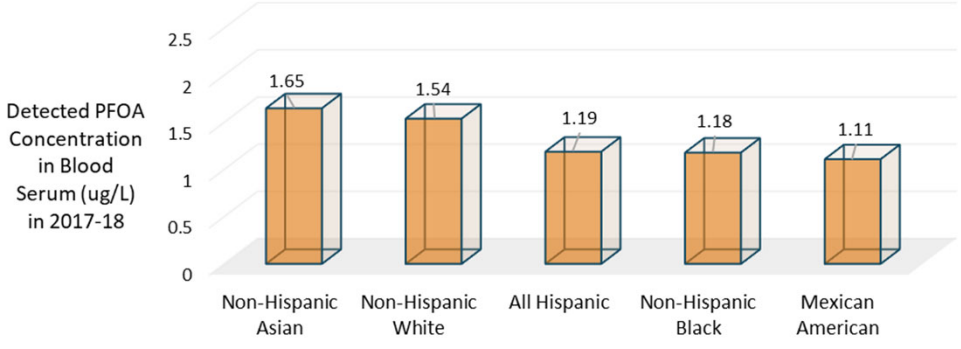
Are There Demographic Variations?

(from U.S. Centers for Disease Control and Prevention, https://www.cdc.gov/exposurereport/data_tables.html)

Geometric-mean blood-serum concentrations of PFOA in U.S. residents during 2017-18



Demographic categories selected by CDC.

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PFAS Regulations

2019/2020
California State Water Resources Control Board (Department of Drinking Water)

- Issued monitoring requirements to a list of public water systems throughout the state under General Order No. DW2020-0003-DDW.
- United was included on the list of public water systems and started sampling for PFAS in OH wells in 2019.

DDW notification and response levels

PFAS Compound	Notification Level (ng/l)	Response Level* (ng/l)
PFOA	5.1	10
PFOS	6.5	40
PFBS	500	5000
PFHxS	3	20

*based on a running four quarter average
ng/l – nanograms per liter. Parts per trillion is an equivalent unit of measure

April 2024
US EPA

- Finalized the **National Primary Drinking Water Regulation**
- Maximum Contaminant Levels (MCLs) for six PFAS (details on next slide)

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PFAS National Primary Drinking Water Regulation

PFAS Compound	Maximum Contaminant Level Goal (MCLG)	Maximum Contaminant Level (MCL)
	ng/l (ppt)	ng/l (ppt)
PFOA	0	4
PFOS	0	4
PFHxS	10	10
PFNA	10	10
HFPO-DA (GenX Chemicals)	10	10
Mixtures containing two or more: PFHxS, PFNA, HFPO-DA, and PFBS	1 (unitless) Hazard Index	1 (unitless) Hazard Index
ng/l – nanograms per liter. Parts per trillion is an equivalent unit of measure		

*Compliance is determined by running annual averages at the sampling point

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PFAS National Primary Drinking Water Regulation

Implementation: Timeframes for Water Systems

WITHIN 3 YEARS (By 2027)

2024 – 2027

- Initial monitoring must be complete (**2024 – 2027**)

AT 3 YEARS (Starting 2027)

2027 – 2029

- Results of initial monitoring must be included in Consumer Confidence Reports
- Regular monitoring for compliance must begin, and results of compliance monitoring must be included in Consumer Confidence Reports
- Public notification for monitoring and testing violations

AT 5 YEARS (Starting 2029)

Starting **2029**

- Comply with all MCLs
- Public notification for MCL violations

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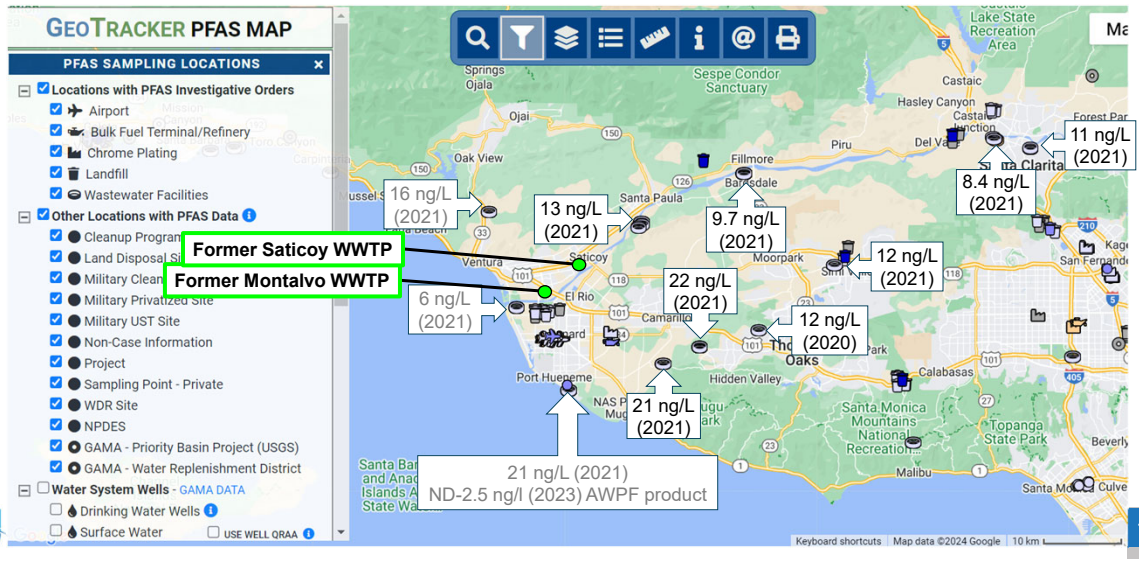
Potential Upstream Sources—WWTP Effluent

(https://geotracker.waterboards.ca.gov/map/pfas_map#)



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Potential Source—Coastal Air

Eos

Ocean Waves Mist Decades-Old PFAS into the Atmosphere

"Forever chemicals" enter the air as sea spray aerosols, polluting coastlines and beyond.

By Grace van Deelen
22 April 2024

Sea spray now releases large amounts of PFAS from the ocean into the atmosphere. Credit: Pexels/Jess Loiterton

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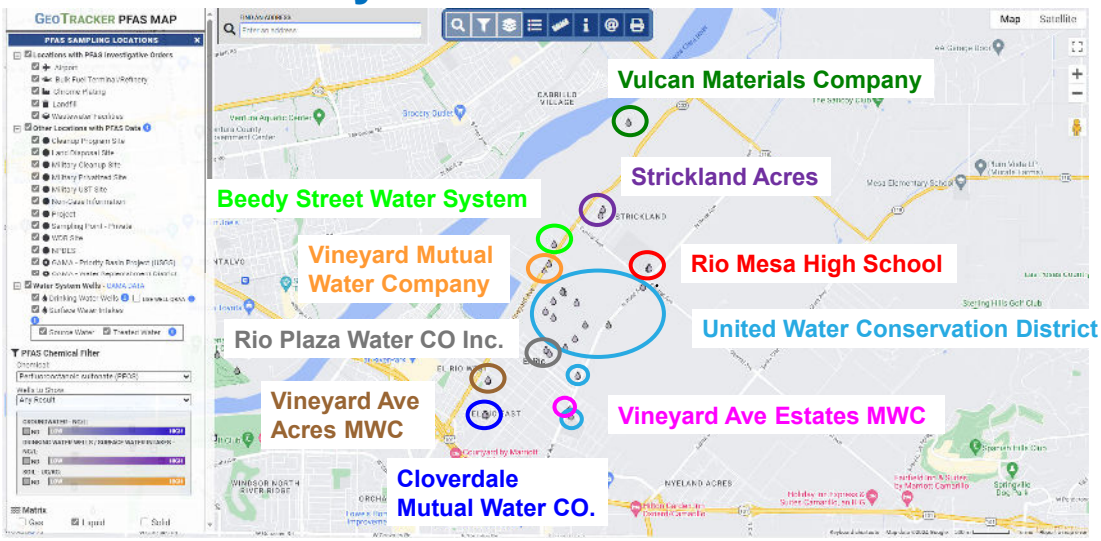
Water Supply Wells Sampled for PFAS in Oxnard Forebay (https://geotracker.waterboards.ca.gov/map/pfas_map#)



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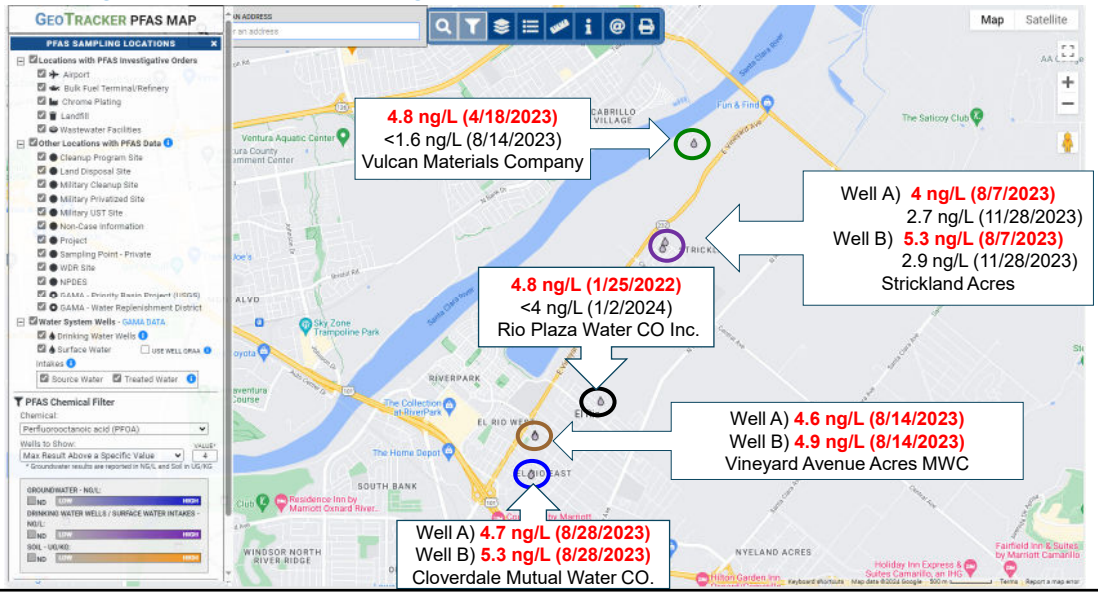
PFOA Results > 4 ng/l in Water Supply Wells

(https://geotracker.waterboards.ca.gov/map/pfas_map#)



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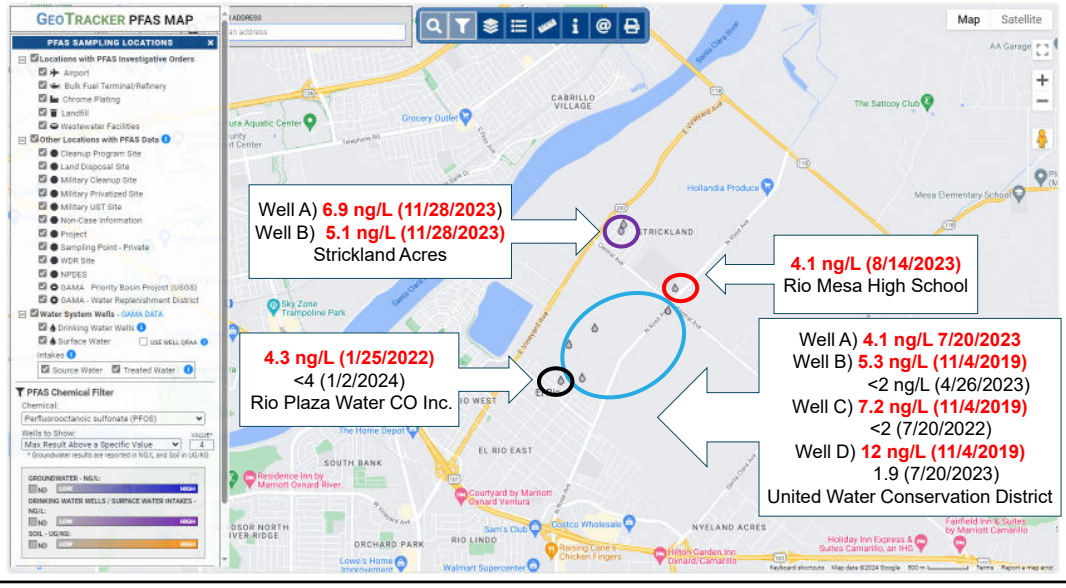
PFOS Results > 4 ng/l in Water Supply Wells

(https://geotracker.waterboards.ca.gov/map/pfas_map#)



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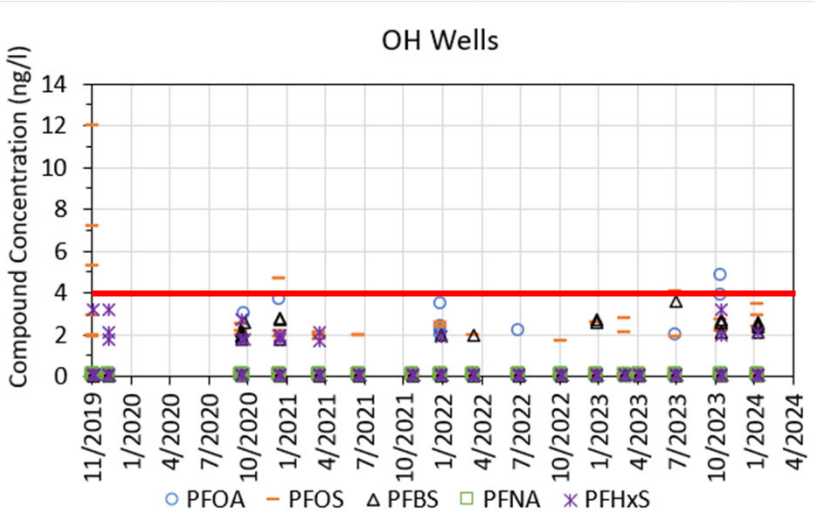
United PFAS Sampling Results – OH Wells



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Sampling PFAS Recommendations

(from SWRCB DDW PFAS Sampling Guidance November, 2022)

- Minimize use on the day of the sample event, preferably 24 hours prior to the event:
  - Cosmetics, moisturizers, sun-blocks, insect repellants, fragrances, creams, or other personal care products (including hair products).
- Fill the vehicle with gasoline the day before sampling
- Things that are likely to contain PFAS and to be avoided include:
  - Paper packaging for food or fast food.
  - New or unwashed clothing.
  - Clothing washed with fabric softeners or dried with anti-static sheets.
  - Synthetic water-resistant/or stain-resistant materials (such as waterproof clothing and shoes such as Gore-Tex), waterproof or coated Tyvek® material, Teflon®, Kynar®, Neoflon®, Tefzel®).
  - Waterproof markers (such as Sharpie®, etc.).
  - Chemical or blue ice.

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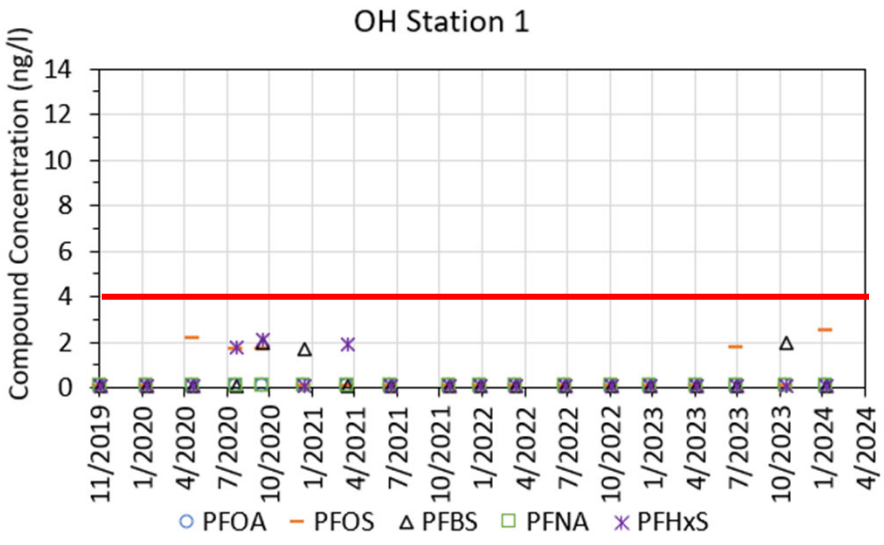
United PFAS Sampling Results – OH Station #1



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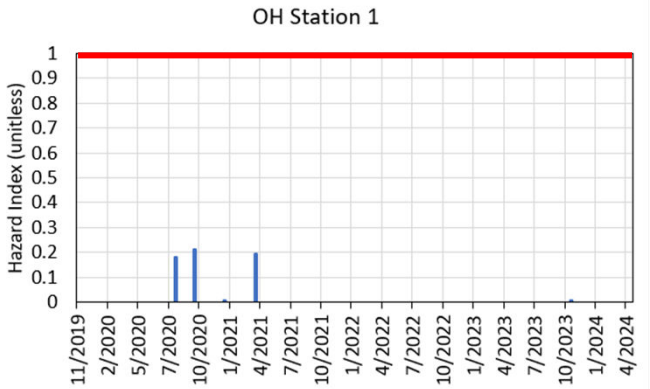
Hazard Index – OH Station #1

The Hazard Index is calculated by adding the ratio of the water sample concentration to a Health-Based Water Concentration.

$$HI\ MCL = \left(\frac{[HFPO\text{-}DA_{water}]}{[10\ ppt]}\right) + \left(\frac{[PFBS_{water}]}{[2000\ ppt]}\right) + \left(\frac{[PFNA_{water}]}{[10\ ppt]}\right) + \left(\frac{[PFHxS_{water}]}{[10\ ppt]}\right) = 1$$



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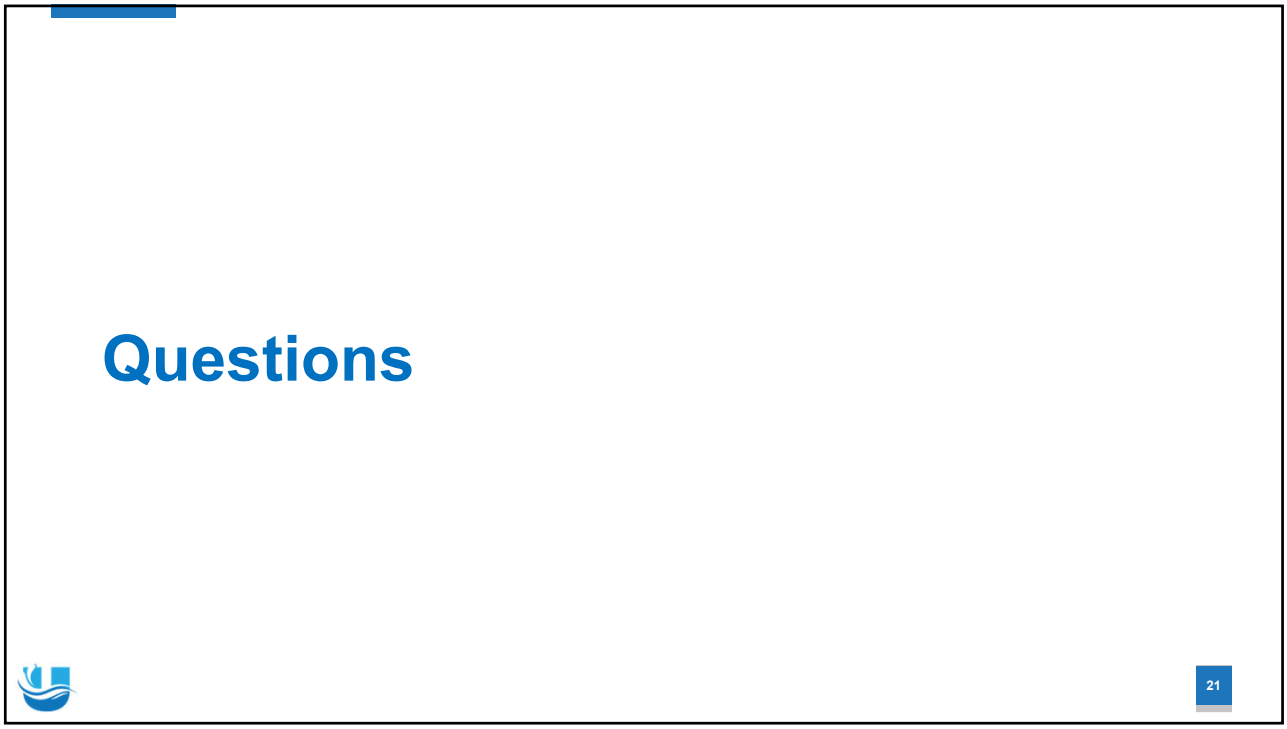

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