Engineering, Operations & Technology Committee

Update on Constituents of Emerging Concern

Item 7b

May 8, 2023

Constituents of Emerging Concern (CECs)

Presentation Topics

- Introduction to CECs
- Regulatory process
- Per- and polyfluoroalkyl substances (PFAS)
- Microplastics
- Metropolitan's applied research

Constituents of Emerging Concern (CECs)

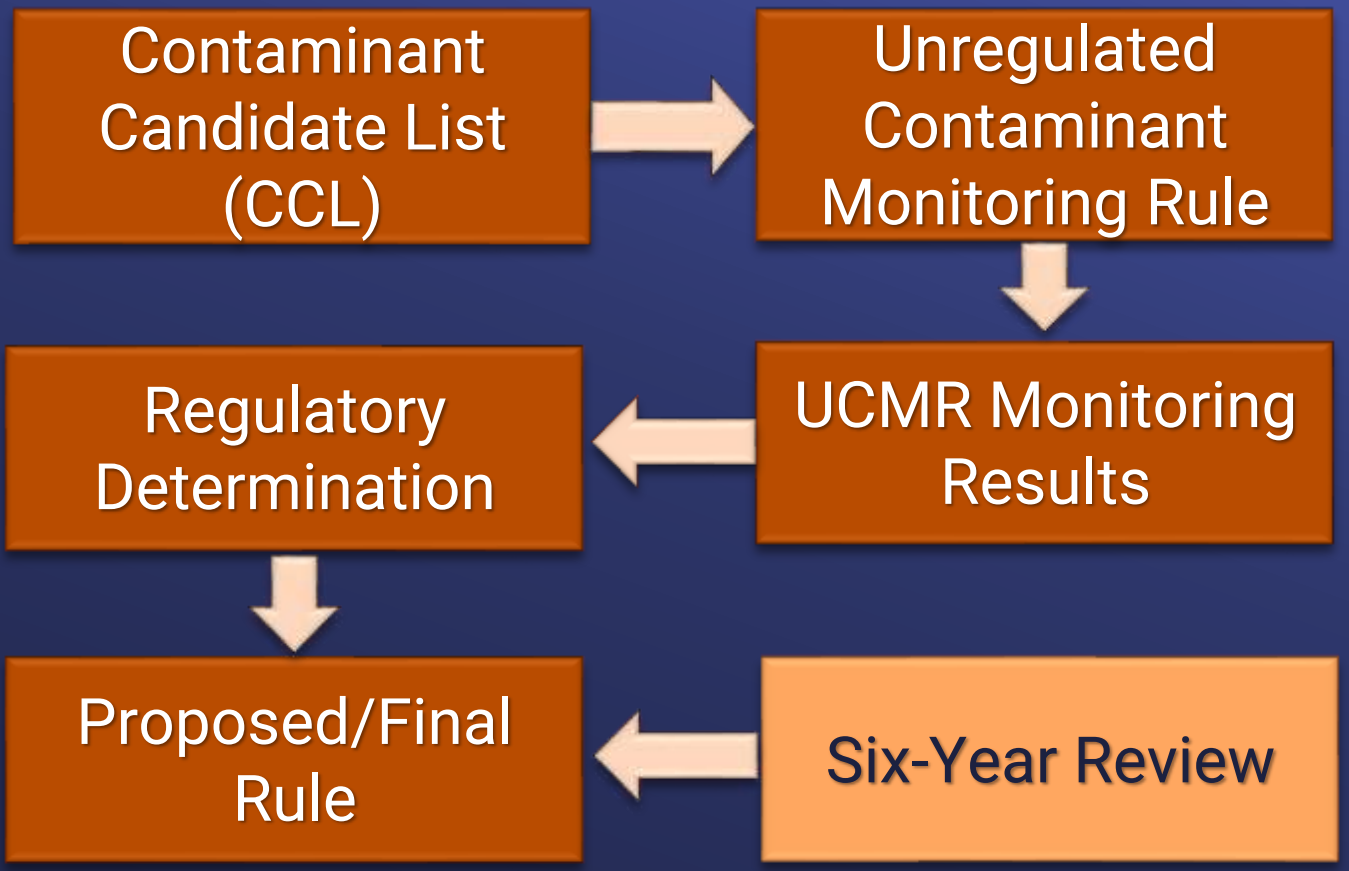
What are CECs?

- *Over 120 regulated constituents in drinking water*
- *Thousands of non-regulated potential constituents*

- Emerging and non-regulated constituents with potential health concerns
  - Pharmaceutical and personal care products
  - Cyanotoxins
  - Unregulated disinfection byproducts, e.g., nitrosamines
  - Pathogens
  - Per- and polyfluoroalkyl substances (PFAS)
  - Microplastics

Regulating CECs

Regulatory Decision Process



States have primacy and their own regulatory process, but state standards cannot be less stringent than federal regulations

State Legislation on CECs

Senate Bill 230 (Portantino)

- Co-sponsored by Metropolitan
- Signed into law in September 2022
- Ensures a unified, consistent, and science-based approach to identify CECs relevant to California
  - Authorizes the State Water Board to establish a dedicated program for CECs in drinking water
  - Authorizes the State Water Board to establish a Science Advisory Panel for CECs in drinking water
  - Establishes the CEC Action Fund in the State Treasury

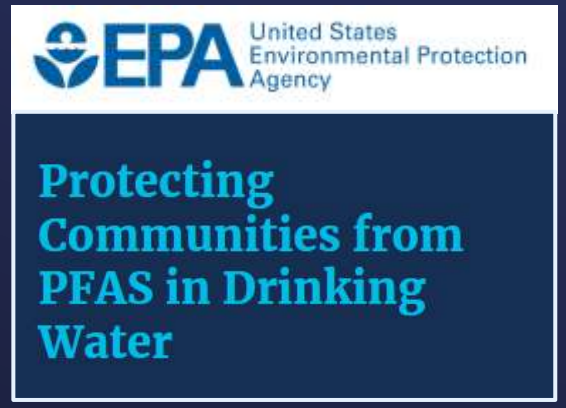
What are PFAS?

Per- and Polyfluoroalkyl Substances (PFAS)

- Large group of manufactured chemicals used in products that resist oils, stains, water, and in fire-suppression foam
  - Some PFAS linked to various health effects
- California DDW issued monitoring orders to drinking water systems starting in 2019
  - PFAS detected in some southern California groundwater
- Monitoring required by U.S. EPA
  - UCMR 3, 2013 – 2015: monitoring for 6 PFAS
  - UCMR 5, 2023 – 2025: monitoring for 29 PFAS

*UCMR = Unregulated Contaminant Monitoring Rule

Proposed Federal Drinking Water Standards



U.S. EPA Proposed Drinking Water Regulations for Six PFAS

	PFOA	PFOS	GenX	PFBS	PFHxS	PFNA
Proposed MCL*	4 ng/L	4 ng/L	Hazard Index** of 1 (unitless)			

- EPA expects to finalize the regulation by the end of 2023
- Compliance required within 3 years of promulgation

*MCL = Maximum Contaminant Level

** Hazard Index = Sum of $\frac{\text{Measured concentration in water}}{\text{Health Based Water Concentration}}$

PFAS Occurrence – Metropolitan's Monitoring

- Metropolitan has voluntarily monitored source and treated water for PFAS since 2013
- The six PFAS with proposed drinking water standards have not been detected in Metropolitan's treated water
- Four PFAS detected at trace levels in some source waters
  - PFHxA, PFBA, PFOS, PFPeA
- Two PFAS detected at trace levels in treated waters
  - PFHxA, PFPeA
- Monitoring results provided to Member Agencies in Annual Water Quality Report

PFAS and CERCLA

EPA is expected to finalize rule designating PFOA and PFOS under CERCLA by August 2023

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- Sept. 2022 – EPA proposed to designate PFOA and PFOS as hazardous substances under CERCLA
- April 13, 2023 – EPA requested public input on whether to designate seven additional PFAS as hazardous substances
  - PFBS, PFHxS, PFNA, GenX, PFBA, PFHxA, and PFDA
  - Precursors to the nine PFAS; groups/categories of PFAS
- Potential impacts to water utilities
  - Liability and costs for disposal of treatment residuals containing PFAS
  - Potential for litigation and financial burden
- Water agencies are asking Congress for exemption from CERCLA liability

Microplastics in California

The Rise of Microplastics

- California SWRCB definition
  - Particles between 1 nanometer and 5 millimeters in size
- Many sources of microplastics
  - Car tires, plastic containers, clothing fibers, cosmetics, personal care products
- Enter water supplies from wastewater and industrial discharges, surface runoff, etc.
- Additional research needed on potential health effects
- Drinking water treatment is effective at removing microplastics (>90%)

Upcoming Monitoring Requirements for Microplastics

August 2022 – State Water Board adopted policy handbook on testing and reporting of microplastics in drinking water, per requirements in SB 1422

- Pilot phase: Standardized and validated sampling procedures are being developed
- Phase 1: Source water monitoring for 2 years (probably starting in early 2024)
- Phase 2: Finished drinking water monitoring for 2 years
- Metropolitan and nine member or retail agencies listed as potentially required to monitor

May 22, 2023

State Water Board workshop for utilities potentially required to monitor

Metropolitan's Method Development and Engagement on Microplastics

- Participated in a methods evaluation study (2021)
- Working with SWRCB to ensure a robust monitoring program and reliable data
- Providing support to member agencies
  - Metropolitan webinar and workshop on April 12
- Converting lab space for microplastics analysis
- Evaluating sampling devices, developing monitoring plan, and procuring equipment for analysis
- Developing communication tools

Over 40 Years of Proactive Applied Research

- Promote applied research to improve understanding of CECs
- Ensure readiness to respond to emerging water quality challenges and future regulations
- Provide input and guidance on regulatory and legislative processes to promote sound science and effective regulations


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928