

PER AND POLYFLUOROALKYL SUBSTANCES UPDATE

Water Operations

Board of Public Utilities
May 23, 2022

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BACKGROUND

1. PFAS are excellent at repelling oil and water
2. PFAS were widely used in industries and consume products in the 1940's



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BACKGROUND

| Constituent | | PFOA | PFOS | PFBS |
|---------------|-----------------------------|-------------|----------------------------------|---------|
| USEPA | Health Advisory Level | January-09 | 400 ppt | 200 ppt |
| | | November-16 | 70 ppt individual or combined | |
| SWRCB- DDW | Notification Level | July-18 | 14 ppt | 13 ppt |
| | | August-19 | 5.1 ppt | 6.5 ppt |
| | | March-20 | 500 ppt | |
| | Response Level | July-18 | 70 ppt combined | |
| | | August-19 | No Change | |
| | | February-20 | 10 ppt | 40 ppt |
| | | March-20 | 5000 ppt | |



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BACKGROUND

1. Per and Polyfluoroalkyl Substances (PFAS) are human-made chemicals.
2. Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are the most extensively produced and analyzed PFAS.
3. The Environmental Protection Agency (EPA) is in the process of regulating PFAS.
4. California State Water Resources Control Board (SWRCB) is also in the process of regulating PFAS.



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DISCUSSION

1. EPA has issued a Federal Health Advisory for PFOS and PFOA of 70 ppt individual or combined.
2. CA SWRCB Notification Level/Response Level (NL/RL) for PFOA 5.1 ppt/10 ppt, PFOS 6.5/40 ppt, Perfluorobutane sulfonic acid (PFBS) 500/5000 ppt, respectively.
3. Office of Environmental Health Hazard Assessment (OEHHA) was tasked to recommend NLs for six more PFAS compounds in February 2020.



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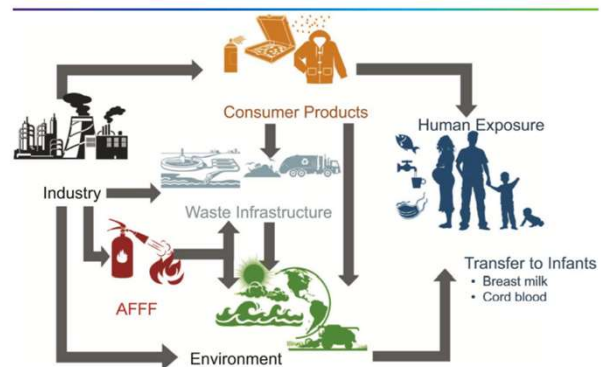
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DISCUSSION

Pending OEHHA NL:

1. Perfluorohexane sulfonic acid (PFHxS)
2. Perfluorohexanoic acid (PFHxA)
3. Perfluoroheptanoic acid (PFHpA)
4. Perfluorononanoic acid (PFNA)
5. Perfluorodecanoic acid (PFDA)
6. 4,8-dioxia-3H-perfluorononanoic acid (ADONA).

PFAS Exposure Pathways



Sunderland et. al (2019)

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DISCUSSION

OEHHA Releases proposed NL for PFHxS

"This document presents a notification level (NL) recommendation by the Office of Environmental Health Hazard Assessment (OEHHA) to the State Water Resources Control Board (Water Board) for perfluorohexane sulfonic acid (PFHxS) in drinking water. OEHHA recommends that the Water Board establish a drinking water NL at 2 parts per trillion (ppt), equivalent to 2 nanograms per liter (ng/L), or at the lowest level at which the chemical can be reliably detected in drinking water using available and appropriate technologies. The NL recommendation is based on the noncancer effects of PFHxS, specifically, decreased thyroid hormone levels in male rats (NTP, 2019). There were insufficient data to evaluate the potential carcinogenicity of PFHxS."



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DISCUSSION

OEHHA Releases proposed NL for PFHxS

Notification Level (NL) Recommendation Documents provide information on health effects from contaminants in California drinking water. A recommended NL is a concentration of a contaminant in drinking water that would pose no significant health risk to individuals consuming the water on a daily basis. The Office of Environmental Health Hazard Assessment (OEHHA) recommends these health-based advisory levels to the Division of Drinking Water of the State Water Resources Control Board (Water Board) for chemicals in drinking water that lack regulatory or maximum contaminant levels (MCLs). Based on these recommendations and other considerations, the Water Board establishes NLs and Response Levels. Health and Safety Code Section 116455 requires drinking water systems to notify their governing body, and recommends they notify consumers, when a detected chemical exceeds its NL. If a chemical is present in a drinking water source at the Response Level – a concentration considerably greater than the notification level – the Water Board recommends that the drinking water system take the source out of service.



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DISCUSSION

Definitions

1. Health Advisory: non-enforceable and non-regulatory, provide technical information to state agencies and other public health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination
2. Notification Level: non-regulatory, health-based advisory levels established by SWRCB when there is no maximum contaminant level (MCL) established.
3. Response Level: A concentration of a contaminant in drinking water delivered for human consumption that SWRCB recommends that additional steps, beyond a Notification Level be taken to reduce exposure to the contaminant. Response Levels are non-regulatory, health-based advisory levels when there is no MCL. This is the level in which the state recommends the water not be served.

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DISCUSSION

Definitions (continued)

4. Public Health Goal: concentrations of contaminants in drinking water that pose no significant acute or chronic health risks. PHGs are not regulatory requirements, but instead represent non-mandatory goals.
5. Maximum Contaminant Level: the maximum permissible concentration of a contaminant established pursuant to sections 116275(c)(1) and (d) of the Health and Safety Code or established by the U.S. Environmental Protection Agency.

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DISCUSSION

Next Steps & Impact to RPU

1. SWRCB will analyze OEHHAs report and takes into consideration technological feasibility and occurrence data.
2. SWRCB will release a NL based off of their findings.
3. If a PFHxS NL is set at the proposed 2 ppt, RPU staff will need to notify its governing bodies, and the governing bodies of where the water is served, within 30 days of a confirmed detection over the notification level.
4. 2020-2021 RPU annual Water Quality Report data for PFHxS ranges from 2.2 - 5.5 ppt
5. Staff is currently monitoring State and Federal updates, as well as wrapping up the Carbon testing and Planning Study for future use.



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STRATEGIC PLAN ALIGNMENT



Priority No. 4 - Environmental Stewardship

Cross-Cutting Threads



Community Trust



Fiscal Responsibility

Sustainability &
Resiliency

Equity



Innovation



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RECOMMENDATION

That the Board of Public Utilities receive and file a Per and polyfluoroalkyl substances update.

