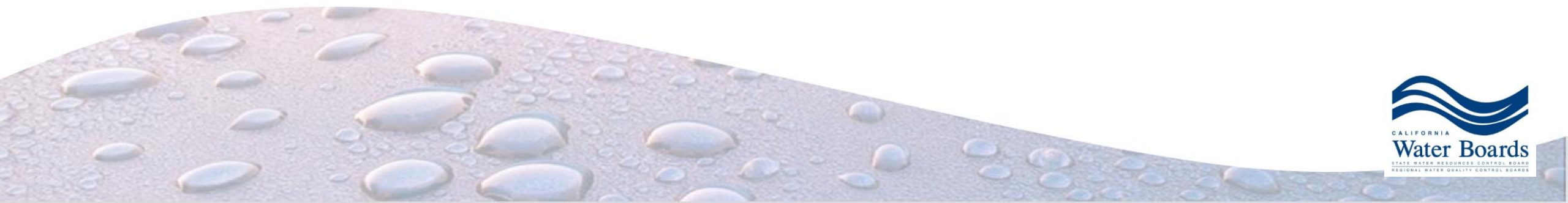




PFAS as an Emerging Concern and a Phased Investigation Approach

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PFAS Background and Use

➤ **Per- and Polyflouroalkyl Substances (PFAS):**

- Group of man-made chemicals resistant to heat, water, and oil (manufactured since the 1940s)

➤ **Used in industrial & consumer products:**

- Carpets/rugs, water-proof clothing, food paper wrappings, cleaning products, metal plating (e.g., cookware), fire-fighting foams



One of the strongest bonds in chemistry,
leads to **environmental persistence**

PFAS Background and Use

➤ Used in industrial and consumer products:

- Carpets & rugs,
- Water-proof clothing,
- Upholstery,
- Food paper wrappings,
- Cleaning products,
- Metal plating (e.g., cookware),
- Fire-fighting foams,



U.S. EPA Third Unregulated Contaminant Monitoring Rule (UCMR3) 2013-2015

➤ **One-time required testing:**

- Systems >10,000 people & select small systems
- Six PFAS compounds (PFOS, PFOA, PFNA, PFHxS, PFHpA, PFBS)
- High min. detection (PFOS 40 ppt, PFOA 20 ppt)

➤ **133 UCMR3 detections in California**

➤ **297 detections beyond UCMR3**

U.S. EPA Drinking Water Health Advisories 2016

**Established Health Advisory levels:
70 parts per trillion (combined PFOA + PFOS)**

Division of Drinking Water Required Testing 2016

- **Follow-up on detections above 70 ppt**
- **Nine water systems**
 - Anaheim, CalAm-Sacramento Suburban, Corona, CWS-Chico, CWS-Visalia, Eastern Municipal, Lathrop, Orange, Pico Rivera
- **Water sources re-sampled to confirm results**
 - Taken offline, treated, or blended

Division of Drinking Water

Notification Levels and Response Level

2018

➤ **Notification Levels:**

- 14 ppt for PFOA
- 13 ppt for PFOS

➤ **Response Level:**

- 70 ppt combined PFOA and PFOS

➤ **Water sources currently over Notification Level:**

- PFOA: 18, PFOS: 25

Division of Drinking Water

Notification Levels and Response Level

2018

➤ Notification Levels:

- Non-regulatory, no mandatory testing
- If exceedance:
 - ✓ Notification required to authorities
 - ✓ Notification recommended to consumers

➤ Response Level:

- Generally 10 to 100 times Notification Level
- DDW recommends removing drinking water source

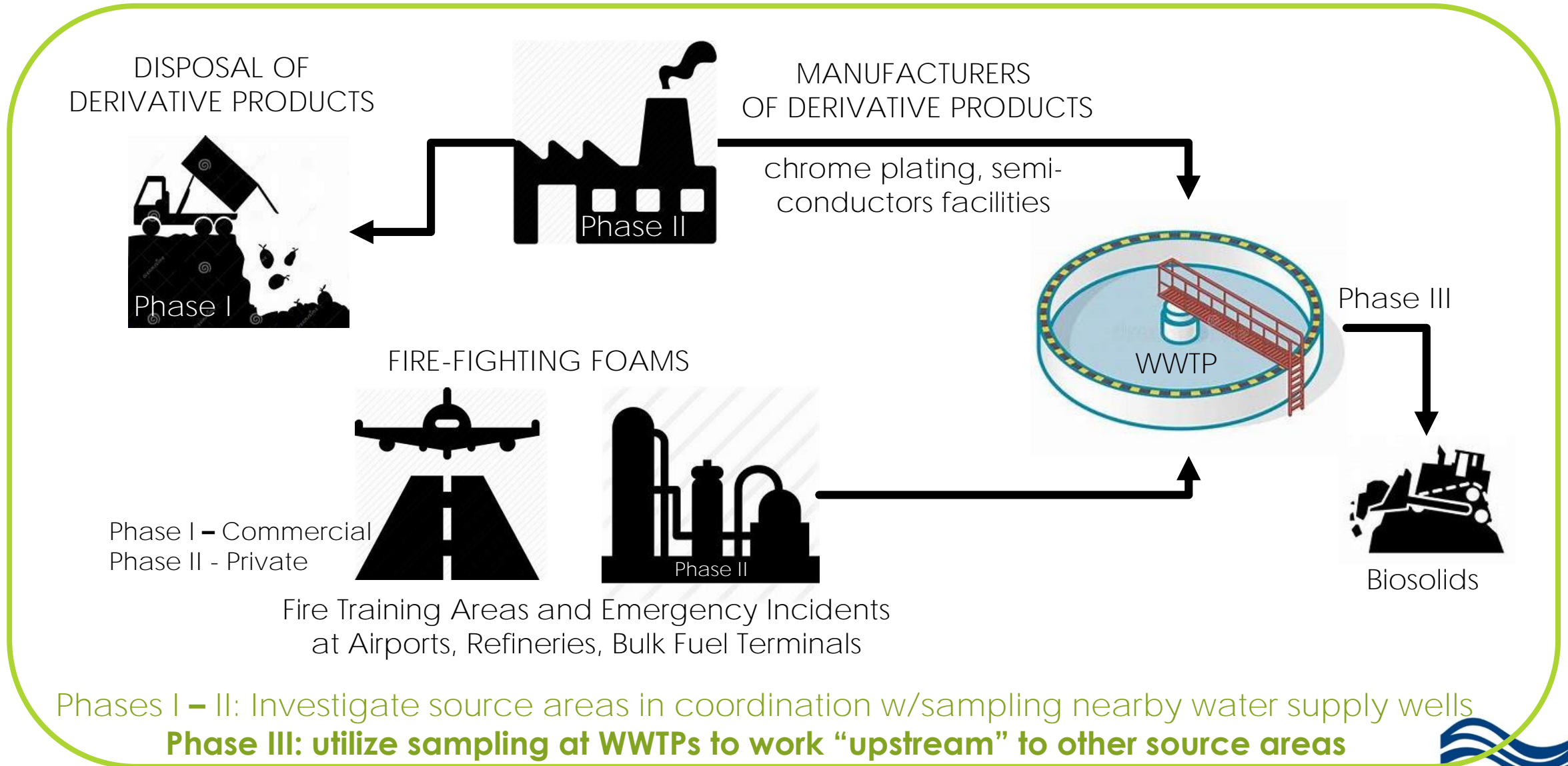
Future Regulatory and Notification Levels Considerations

- **Establishment of an Maximum Contaminant Level (MCL)**
 - DDW makes request to Office of Environmental Health Hazard Assessment for a Public Health Goal (PHG)
 - Request for just PFOA & PFOS or for classes of PFAS
- **Notification Levels for other PFAS compounds?**

Moving Forward

**Water Boards
PFAS Phased Investigation Plan**

PFAS Phased Investigation Approach Overview



PFAS Phased Investigation Approach

Phase I – Commercial Airports

- **30 Commercial Airports with training/fire response sites**
 - March 20, 2019: CA Water Code 13267 Investigative Orders
 - May 9, 2019: Extensions for Workplans and Sampling approved
 - Large-hub (e.g. LAX, SFO) +30 days
 - Medium-hub (e.g. OAK, SAC) +45 days
 - Small-hub (e.g. Long beach) +90 days
 - Non-hub (e.g. Monterey) +90 days
- **Adjacent public water supply wells (1-mile radius)**



PFAS Phased Investigation Approach

Phase I – MSW Landfills

- **196 Municipal solid waste (MSW) landfills**
 - March 20, 2019: CA Water Code 13267 Investigative Orders Sent
 - March 30, 2019: Chem Waste Management requests exemption
 - May 7- 17, 2019: Twenty-one landfills granted extensions (Tulare County, Glenn County, Republic) (+30 to +45 days)
 - May 19, 2019: Workplans are due to the Regions for other landfills
- **Adjacent public water supply wells (2-mile radius)**



Phase I – Public Water Supply Sampling Summary

- Updated prior PWS sampling for EPA's UCMR3 study by targeting all adjacent PWS wells within 1-mile
- **612** Public water supply wells targeted for sampling
- **192** Public Water Systems received California Health and Safety Code 116400 Orders
- Testing for all 14 analytes in method 537rev1.1 or all 18 analytes in method 537.1

PFAS Programmatic Updates – Phase II

➤ Identifying next set of dischargers/responsible parties for Orders

- Chrome platers
- PFOS used in plating operations as a mist suppressant until banned by EPA in 2015
- ~ 140 active platers in CA
- Coordinate with industry representatives



PFAS Phased Investigation Approach

Phases II & III Sampling

- **Considering Investigations (Summer/Fall 2019) at:**
 - Industrial facilities
 - Refineries, bulk terminals, & non-airport fire training areas
 - Wastewater treatment & pre-treatment plants
 - Domestic wells (funding?)

Coming Soon - Next 3 Months

- ▶ **End of May** - Landfills and large-hub airports submitting workplans (WPs) to regions
- ▶ **Early to Mid June** - Medium-hub airports submitting WPs to regions
- ▶ **June 10:** Consolidated comments on EPA's draft Interim recommendations to address groundwater contaminated with PFOA and PFOS
- ▶ **Middle of July** – Drinking water supply well sampling (1st of 4 sampling events) – results likely in August to Sept
- ▶ **End of July** – Small-hub to non-hub airports submitting workplans to regions; landfills sampling wells

Questions/Comments

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Website: waterboards.ca.gov/pfas/