California Water Board’s Actions on Per- and Polyfluoroalkyl Substances (PFAS)

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November 14, 2019
Groundwater Resources Association’s Remediation Conference, Santa Ana, CA
Water Boards – Who is doing What?

**Drinking Water (DDW)**
- Health & Safety Code
- Drinking Water
- NLs, RLs, MCLs
  - ELAP (Laboratory Accreditation)

**Water Quality (DWQ and Regional Boards)**
- Water Code
- Soil, Groundwater, Surface Water
- WQOs

**Acronyms:**
- NL = Notification Level
- RL = Response Level
- MCL = Maximum Contaminant Level
- WQO = Water Quality Objectives
PFAS Source & Public Water System Timeline

2013-2015
- USEPA Third Unregulated Contaminant Monitoring Rule (6,400 samples collected in CA)

May 2016
- USEPA - Lifetime Health Advisory of 70 ppt

June 2018
- State Water Board Interim Notification Levels & Response Levels
  - PFOA: 14 ppt, PFOS: 13 ppt

March/April 2019
- Water Quality Investigative Orders to Landfills and Airports
- Public Water System Sampling Orders adjacent to the Airports and Landfills

July 2019
- California Assembly Bill 756
  - Requires notification to consumers for PFAS detected above NL
  - Effective Jan 1, 2020

August 2019
- Lower notification levels
  - PFOA: 5.1 ppt
  - PFOS: 6.5 ppt

October 2019
- Water Quality Investigative Orders to Chrome Plating Facilities
PFAS Numbers in Other States

Source: ITRC, Section 4 Tables, September 2019
https://pfas-1.itrcweb.org/fact-sheets/
PFAS Source Investigations

Water Quality Investigative Orders (March 20, 2019)

• 30 Commercial airports w/training or fire response sites
• 196 Municipal Solid Waste landfills
• Water Code §13267
• Groundwater, soil, and leachate samples
• Labs compliant with Table B-15 of DoD QSM Version 5.1 (or later)
• 23 required analytes + 15 optional
PFAS Public Water System Sampling

Public Water System Sampling Orders (March-April 2019)

- 192 public water systems (~612 public water supply wells)
- Health & Safety Code §116400
- Wells adjacent to airports, landfills, EPA’s UCMR 3 detections
- Quarterly sampling:
  - 1st Q complete
  - 2nd Q by November 1, 2019
- EPA Method 537 rev 1.1 (14 analytes) or Method 537.1 (18 analytes)
Public Water System Sampling

UCMR 3 well sampled as part of the March/April 2019 §116400 orders
Chrome Plating

• October 25, 2019 – Orders sent to 271 Chrome Plating Facilities
• November 25, 2019 – Questionnaires due
• January 31, 2020 – Work Plans due
  • Proposed sampling (influent, effluent, stormwater, soil, groundwater)
  • Sampling and Analysis Plan
Investigation Locations

- Data collected will:
  - Identify impacted **public water supply wells**
  - Inform **additional areas** where watershed specific source identification efforts are needed
- Inform additional Public Water Supply sampling
- Inform future investigations
- Inform consideration of Public Health Goals (PHGs) and eventually potential MCLs
Submitted Work Plans: 97% (Airports), 96% (Landfills)

Approved Work Plans by Regional Boards: 43% (Airports), 87% (Landfills)

Submitted Sampling & Analysis Reports: 3% (Airports), 9% (Landfills)

Status of PFAS General Orders (Airports and Landfills – as of 11/6/2019)
PFAS Assessment
GAMA/USGS Project

- PFAS statewide assessment
- Suite of 24 PFAS added to Groundwater Ambient Monitoring and Assessment (GAMA) Priority Basin Project analysis in July 2019
- Studies completed in San Diego, North Coast, and North San Joaquin Valley
- Data published via Data Releases
- Assessment complete within five years
- USGS performing work under contract with State Water Board
As of September 2019

- 14 laboratories accredited for EPA Method 537.1
- 3 laboratories accredited for EPA Method 537 rev 1.1
- 10 laboratories accredited for DoD QSM Version 5.1 or later (non-drinking water)
Recent Legislation (effective 1/1/2020)

Assembly Bill 756 (July 2019):

• Authorizes Water Board to order a public water system to:
  ❖ Monitor for PFAS in accordance with a State Water Board order
  ❖ Applies to individual, specific groups, or to all public water systems
  ▼ Report all results electronically to the State Water Board
Recent Legislation

Assembly Bill 756 (July 2019) requires:

• For all Water Systems ordered to do monitoring for PFAS:
  ▫ Report any confirmed detection to the customers via the annual Consumer Confidence Report unless the water source is taken out of use
  ▫ **In addition** for PFAS with NLs & RLs (PFOA/PFOS):
    • Any exceedance over an NL to be reported within 30 days consistent with H&S Code 116455
    • Any exceedance over an RL requires the water source taken out of use OR provide public notification within 30 days in compliance with H&S Code 116455
# PFOA/PFOS Drinking Water Advisory Levels

<table>
<thead>
<tr>
<th></th>
<th>Reliably Detected Level (LCMRL)</th>
<th>Concentrations (in parts per trillion)</th>
<th>USEPA Health Advisory</th>
<th>Current CA Response Level</th>
<th>Interim CA Notification Level</th>
<th>New CA Notification Level</th>
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<td>PFOA</td>
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<td>7</td>
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<tr>
<td>PFOS</td>
<td>6.5 (EPA Method 537 rev 1.1)</td>
<td>2.7 (EPA Method 537.1)</td>
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<tr>
<td></td>
<td></td>
<td>0.4</td>
<td>7</td>
<td>70 (individual or combined)</td>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>
Public Water System Results – 1st Quarter Data

Released to the public on October 14, 2019

Data and interactive maps available at https://www.waterboards.ca.gov/pfas/

Complete data set available

Charts summarizing frequency of detections
One part per trillion (ppt) denotes one part per 1,000,000,000,000 parts, and a value of 1 x 10^-12. This is equivalent to about thirty seconds out of a million years.

Concentration Range:
Notification Level (NL) is set at 5.1 ppt for PFOA, and 8.5 ppt for PFOS. Response Level (RL) is set at 70 ppt for PFDA, PFOS, and the sum of PFOA + PFOS.

Advisory Levels
- Select all
- Less than Notification Limit
- Between the Notification Limit and the Response Level
- Between the Response Level (PFOA + PFOS) and 100 ppt
- >100 ppt (PFOA+PFOS)

Hold down the ‘CTRL’ key to select multiple Concentrations.
Public Water Supply Well Results – Charts

Detects By Chemical

COUNT

CHEMICAL

10/20/2019
2020 PFAS Upcoming Actions

- Additional sampling outwards from impacted public water supply wells
- Focused watershed-based source & public water system investigations
- Sampling at Wastewater Treatment Facilities (influent, effluent, and biosolids)
- Source investigations at Refineries and Bulk Terminals
- Integration of data from DoD and additional sampling of public water system wells around impacted installations
- Identify strategies and funding for domestic well sampling in impacted areas
- Data analysis and visualizations to inform the public and decision makers
Evolving Challenges

- Fate & Transport Properties
- Bioavailability, Biomagnification
- Toxicity
- Treatment Technologies
- Forensics
- Sampling
- Cleanup Levels
Technical Seminar

PFAS IN CALIFORNIA: PAST, PRESENT & FUTURE

December 4 - 5, 2019

CalEPA, Sacramento, CA

Datathon

5 panels

17 presentations

Webcast Information: https://video.calepa.ca.gov/
Resources

PFAS Main Webpage:
https://www.waterboards.ca.gov/pfas/

Questions/Comments: PFAS@waterboards.ca.gov

Subscribe to the ListServe at :
https://www.waterboards.ca.gov/resources/email_subscriptions/

Data to be available at:

GAMA Data viewing tools: https://www.waterboards.ca.gov/gama/

GeoTracker Sampling/Investigation Results:
https://geotracker.waterboards.ca.gov/
Thank You

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