OCWD/MWDOC JOINT PLANNING
PFAS UPDATE

July 24, 2019
Jason Dadakis
Executive Director of Water Quality & Technical Resources
Outline

• Background
• CA Regulatory Update
• Other States’ Actions
• Pilot Testing & Planning Study
• Legislative Actions
• Outreach
What Are PFAS, PFOA & PFOS?

- PFAS = Per- and Polyfluoroalkyl Substances (family of 1000s of chemicals)
- PFOA = Perfluorooctanoic Acid (C$_8$H$_{15}$F$_{17}$O$_2$)
- PFOS = Perfluorooctane Sulfonate (C$_8$H$_{17}$F$_{17}$O$_3$S)
PFAS Used Across A Wide Range of Industries and Consumer Products: Water/Oil/Stain Resistant
PFAS Exposure Pathways

- Industry
- Consumer Products
- Waste Infrastructure
- Environment
- AFFF

Transfer to Infants:
- Breast milk
- Cord blood
REGULATORY UPDATE
OCWD PFAS Timeline

- **2009:** USEPA Provisional Health Advisories for PFOA & PFOS
  - PFOA = 400 ng/L
  - PFOS = 200 ng/L
- **2012:** WRF PFAS study includes GWRS testing
- **2013 – 2015:** OCWD lab performs UCMR3 for Producers
- **2016:** USEPA Lifetime Health Advisory: PFOA + PFOS = 70 ng/L
- **2018 (July):** CA DDW issues interim Notification & Response Levels
  - NL PFOA = 14 ng/L
  - NL PFOS = 13 ng/L
  - RL PFOA + PFOS = 70 ng/L
- **2019 (March):** CA DDW issues PFAS Monitoring Orders to 12 Producers
California Notification & Response Levels Are Unique

- Defined generally in state law (Health and Safety §116455)
- Idea is to provide advisory levels ahead of enforceable MCLs
- Specifics on how to determine are DDW policy
- **Only legal requirement**: notification of governing body if > Notification Level
- All other actions are **recommendations from DDW policy**
- Setting Notification and Response Levels **does not** require
  - Peer review
  - Public notice
  - Public comment
Producers with One or More Recent Monitoring Order Results Greater Than DDW Interim NLs for PFOA or PFOS

<table>
<thead>
<tr>
<th>Producer</th>
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<tbody>
<tr>
<td>Anaheim</td>
</tr>
<tr>
<td>East Orange County Water District</td>
</tr>
<tr>
<td>City of Fullerton</td>
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<tr>
<td>City of Garden Grove</td>
</tr>
<tr>
<td>Irvine Ranch Water District</td>
</tr>
<tr>
<td>City of Orange</td>
</tr>
<tr>
<td>City of Santa Ana</td>
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<tr>
<td>Serrano Water District</td>
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<tr>
<td>Yorba Linda Water District</td>
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</tbody>
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Santa Ana River at Imperial Hwy

**Aug 2016 – Present**

**Averages (ng/L)**
- PFOA: 20
- PFOS: 17
- PFOA+PFOS: 37

**Min / Max (ng/L)**
- PFOA: 10 / 40
- PFOS: 10 / 28
- PFOA+PFOS: 21 / 59
Upper SAR Watershed Monitoring

**PFOA & PFOS Results (ng/L)**
Average Reported for sites with multiple samples

- PFOA: 24
- PFOS: 23
- \( n = 19 \)

- PFOA: 22
- PFOS: 16

- PFOA: 25
- PFOS: 2

- PFOA: 17
- PFOS: 10

- PFOA: 25
- PFOS: 2

- PFOA: 6
- PFOS: ND

- PFOA: 13
- PFOS: 15
- PFOS: ND

- PFOA: 10
- PFOS: ND

- PFOA: 15
- PFOS: 14

- PFOA: 18
- PFOS: 7

- PFOA: 11
- PFOS: 15

- PFOA: 9
- PFOS: 10

- PFOA: 24
- PFOS: 2

- PFOA: 16
- PFOS: 11

- PFOA: 16
- PFOS: 14

- PFOA: 15
- PFOS: 14

- PFOA: 11
- PFOS: 15

- PFOA: 10
- PFOS: 29

- PFOA: 41
- PFOS: 15
Proposed Reductions to DDW NLs & RLs

- Based OEHHA review of recent National Toxicology Program (NTP) study data
- “Lowest observed effect”/1 – in – 1 million cancer risk estimate
  - PFOA = 0.1 ng/L (pancreatic cancer endpoint)
  - PFOS = 0.4 ng/L

<table>
<thead>
<tr>
<th>Standard</th>
<th>PFAS Compound</th>
<th>Current</th>
<th>Proposed</th>
<th>Adjustment from “lowest observed effect” level</th>
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</thead>
<tbody>
<tr>
<td>Notification Level</td>
<td>PFOA</td>
<td>14 ng/L</td>
<td>5.1 ng/L</td>
<td>Reliable Detection Limit</td>
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<tr>
<td>Notification Level</td>
<td>PFOS</td>
<td>13 ng/L</td>
<td>6.5 ng/L</td>
<td>Reliable Detection Limit</td>
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<tr>
<td>Response Level</td>
<td>PFOA</td>
<td>70 ppt combined</td>
<td>10 ng/L</td>
<td>100x 1-in-1-million cancer risk</td>
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<tr>
<td>Response Level</td>
<td>PFOS</td>
<td>40 ng/L</td>
<td></td>
<td>100x 1-in-1-million cancer risk</td>
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Effects of Lowering DDW Response Level

• Two Producer wells in OCWD area above current/previous 70 ng/L PFOA + PFOS RL
• Reducing Response Level to PFOA = 10 ppt and PFOS = 40 ppt
  – 39 of 51 OC wells tested under Monitoring Orders will exceed RL in OCWD area
  – Project ~71 out of ~200 OCWD area wells would exceed (~100,000 acre-ft of annual pumping)
• Preliminary estimate of OCWD area financial Impacts
  – 39 wells lost = $30 million/yr in replacement treated imported water
  – 71 wells lost = $50 million/yr in replacement imported water
  – Wellhead treatment for 71 wells = ~$200 million capital + additional annual O&M
DDW Database*: Other Counties & Agencies Affected

• Los Angeles County
  – Santa Clarita Valley Water
  – Pico Rivera
  – Glendale
  – Montebello
  – La Habra Heights

• Riverside County
  – Corona
  – Riverside
  – Elsinore Valley
  – Rubidoux CSD
  – Desert Water Agency

• San Luis Obispo County

• Alameda County
  – Zone 7 Water Agency
  – Pleasanton

• Butte County
  – Cal Water Service Co – Chico
  – Cal Water Service Co. - Oroville

• Riverside County
  – Eastern Municipal Water District

* 75% of Ordered Systems Reporting
July 3: Meeting in Sacramento

- **OCWD**: Vicente Sarmiento, Mike Markus, Jason Dadakis
- **Intertox**: Richard Pleus, Ph.D.
- **Lobbyists**: Don Gilbert & Jason Gonsalves
- **Santa Clarita Valley Water Agency**: Matt Stone
- **Cabinet Secretary**: Jared Blumenfeld
- **State Board Chair**: Joaquin Esquivel
- **Deputy Director (DDW)**: Darrin Polhemus
- **OEHHA Director**: Lauren Zeise, Ph.D.
July 5: Secretary Blumenfeld Phone Call

- Notification and Response Levels will be set separately
- Subsequent DDW indicates NL to be released on July 24
  - OEHHA to release basis for NL (i.e., use of underlying NTP study)
  - OEHHA to announce beginning of Public Health Goal (PHG) process
- State to hold “Science Webinar” in September 2019
- New Response Level will be set in October 2019
OTHER STATES’ ACTIONS
<table>
<thead>
<tr>
<th>State</th>
<th>Type</th>
<th>PFOA (ng/L)</th>
<th>PFOS (ng/L)</th>
<th>Other PFAS</th>
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<tr>
<td>MI</td>
<td>Advisory Panel Recommendation</td>
<td>8</td>
<td>16</td>
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<tr>
<td>MN</td>
<td>Health Based Guidance for Water</td>
<td>35</td>
<td>15</td>
<td>PFBS, PFHxS, PFBA,</td>
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<tr>
<td>NH</td>
<td>Proposed MCL</td>
<td>12</td>
<td>15</td>
<td>PFHxS = 18, PFNA = 11</td>
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<tr>
<td>NJ</td>
<td>Pending MCL</td>
<td>14</td>
<td>13</td>
<td>PFNA = 13</td>
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<tr>
<td>NY</td>
<td>Proposed MCL</td>
<td>10</td>
<td>10</td>
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<tr>
<td>VT</td>
<td>Drinking Water Health Advisory</td>
<td>20 combined w/ PFHxS, PFHpA, &amp; PFNA</td>
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<td></td>
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<tr>
<td>PA</td>
<td>Proposed MCL (via legislation)</td>
<td>5</td>
<td>5</td>
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<tr>
<td>WI</td>
<td>Proposed Standard</td>
<td>20 combined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MA</td>
<td>Proposed MCL</td>
<td>20 combined w/ PFHxS, PFHpA, &amp; PFNA</td>
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OCWD PILOT TREATMENT & PLANNING STUDIES
PFAS Treatment Technologies

Carbon Adsorption: granular activated carbon (GAC)
  • More conventional treatment, site specific, WQ factors in, footprint area also

Ion Exchange (IX) resin

Reverse Osmosis or Nanofiltration (RO or NF)
  • Higher capital cost, concentrate disposal
OCWD Field Pilot Testing

- Pilot test skid delivered on July 22nd
- Pilot will assess GAC & IX (4-slots)
  - Phase 1 = Calgon + Evoqua GAC & Purolite & Dow
  - Phase 2 = TBD based on lab results + consultant rec.
- Laboratory bench-scale testing of GAC and NF
- Lab work to assess multiple groundwaters
- **Goal:** inform & accelerate local retail agencies’ potential future treatment decisions
- Consultant support proposals under review
Planning Study with Producers

- **Goal:** assess feasibility of treatment for individual Producers
  - Number of wells impacted
  - Location of wells impacted
  - Space available
  - Number of treatment systems required
  - Integration into Producer operations
  - DDW Permitting & CEQA assessment
  - Planning-level capital cost estimates

- Supplement to Treatment Pilot Testing activities
- RFP to be issued by July 26
LEGISLATIVE ACTIONS
State Legislation

• AB 756 (C. Garcia) PFAS
  – Amended to largely be redundant to current State Board regulations/policy
  – Still contains some enhanced public notification requirements
  – Passed Assembly & Senate, awaiting Governor’s signature
  – OCWD took an oppose position and sent a veto request to Governor

• AB 841 (Ting) PFAS
  – Would require OEHHA to adopt a work plan by 2021
  – Plan to assess which PFAS should be identified as a potential risk to human health
  – Consideration given to PFAS likely to be present in CA water and feasible to detect
  – OCWD took a support position; this bill is now a 2-year bill
Federal Legislation

- S. 1507 amended into S. 1790 to mandate the establishment of a federal Maximum Contaminant Level (MCL). Sponsor: James Inhofe (R-OK)
- OCWD took a support position on S. 1507 provisions
- **Status:** S. 1790 Passed by the Senate

- Adds PFAS to toxic pollutants list under Federal Water Pollution Control Act, allowing EPA to publish effluent & pretreatment standards. Sponsor: Chris Pappas (D-NH)
- Requires the EPA to list PFAS as hazardous substances under CERCLA within one year. Sponsor: Rep. Debbie Dingell (D-MI)
- **Status:** H.R. 2500 Passed by the House

Differences in bills to be worked out in Conference Committee in Sept
Legislative Outreach

- Orange County House Congressional Delegation, including joint letter to U.S. EPA seeking MCL standard coordinated through Congressman Correa’s office

- OCWD met with Steven Cook, Deputy Assistant Administrator, U.S. EPA Office of Land and Emergency Management

- Working with public stakeholders:
  - AWWA
  - AMWA
  - WEF
  - NACWA
  - CASA
  - ACWA
  - WateReuse
  - Solid Waste Companies
Outreach (Cont.)

Meetings with State Elected Officials:
- Senator John Moorlach
- Assemblymember Sharon Quirk-Silva
- Assemblymember Cottie Petrie-Norris
- Assemblymember Steven Choi

Meetings with Federal Elected Officials:
- Congressman Harley Rouda
- Congressman Gil Cisneros

Meetings with State Electeds’ staff:
- Senator Tom Umberg
- Senator Ling Ling Chang
- Senator Bob Archuleta
- Senator Patricia Bates
- Assemblymember Tom Daly
- Assemblymember Phillip Chen
- Assemblymember Tyler Diep

Meetings with Federal Electeds’ Staff:
- Senator Dianne Feinstein
- Congresswoman Katie Porter
- Congressman Lou Correa
- Congressman Alan Lowenthal

Orange County Supervisors
- Chiefs of Staff To All OC Supervisors