MWRA Wastewater Advisory Committee

MassDEP PFAS Update

Kathleen Baskin

March 5, 2021

PFAS & Drinking Water

PFAS6 Drinking Water Standard

- Regulations establish a new Maximum Contaminant Level (MCL): highest level of a contaminant allowed in drinking water. MCLs are enforceable standards
- Published on October 2, 2020
- Program Review: MassDEP required to review regulations every three years to ensure we are incorporating, reflecting, responsive to the latest science.
- "PFAS6" MCL is **20 ppt** for the sum of six PFAS
  - PFOS: perfluorooctane sulfonic acid
  - PFOA: perfluorooctanoic acid
  - PFHxS: perfluorohexane sulfonic acid
  - PFNA:perfluorononanoic acid
  - PFHpA: perfluoroheptanoic acid
  - PFDA: perfluorodecanoic acid
- No federal standard, PFOS and PFOA health advisory only

Ongoing Toxicity Evaluation

- MCL requires reassessment every three years
  - Reflects rapidly expanding scientific data
  - Potential updates to current regulation covering subclass of six PFAS
  - Potential expansion to include guidelines for additional PFAS
    - Some other states have developed, or are considering, values for PFBA; PFBS; PFHxA; GenX
- ORS developing data base and tracking scientific developments
  - Including carcinogenicity data

Drinking Water Values for PFAS (ppt)

	PFOS	PFOA	PFNA	PFHxS	PFHpA	PFDA
U.S. EPA Health Advisory	70 Sum of two		NA	NA	NA	NA
MA MCL, GW standard	70 (2018 ORSG) → 20 (MCL; MCP GW standard) Sum of five → Sum of six (add PFDA) MCL October 2020: Sum of six PFAS = 20					
VT MCL	20 Sum of five					NA
CT Action Levels	70 Sum of five					NA
WI Recommended GW standard	20					
ATSDR Based on draft ATSDR toxicity values and EPA exposure parameters	7	11	10	70	NA	NA
NY MCL	10	10	NA	NA	NA	NA
NJ MCL	13	14	13	NA	NA	NA
CA Notification levels (Response Levels)	6.5 (40)	5.1 (10)	NA	NA	NA	NA
MI MCL	16	8	6	51	NA	PFNA value recommended
MN guidelines	15	35	NA	47	NA	NA
NH MCL	15	12	11	18	NA	NA
Most other states (EPA value by default)	70		NA	NA	NA	NA

MassDEP

MCL Applicability to Public Water Systems

MCL applies to:

- Community Water Systems (year-round residential customers)
- Non-transient, Non-Community Water Systems (NTNCs)
  - Schools/Daycares, Larger Businesses (25+ employees)

MCL does not apply to:

- Transient, Non-Community Water Systems (TNCs)
  - Recreational Areas, Campgrounds, Hotel/Motels, Small Businesses
  - But they must collect one sample
- Consecutive Systems (those that purchase all their water)

Drinking Water: Supplemental Budget for Addressing PFAS

- Supplemental Budget (Chapter 142 of the Acts of 2019)

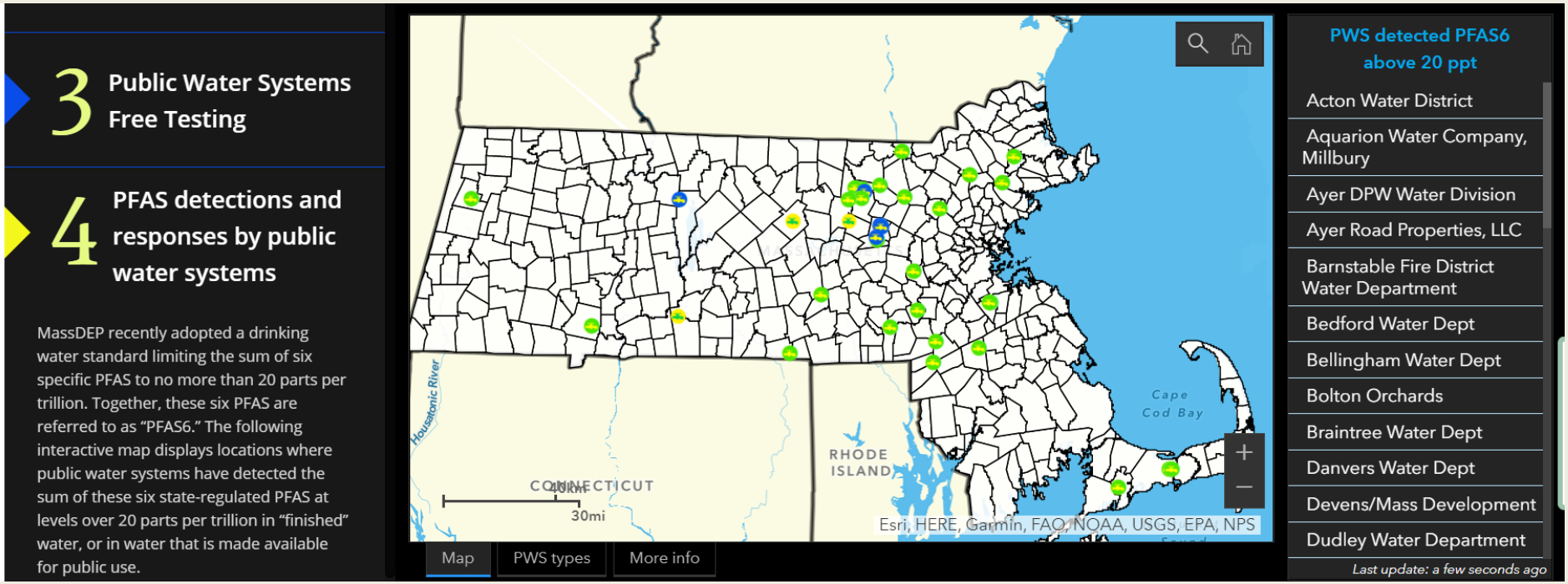
- Design: $8.4M for public & private supply testing, design grants
  - Grants: $2M to 10 PWS Round #1; Round #2 to be announced soon
  - Free lab analyses for all PWS, some private wells

- Construction: to State Revolving Fund/Clean Water Trust to offset 2% interest
  - $10.65M for remediation of PFAS contamination
  - $9.05M for improvements to local water systems

PFAS in Public Water Systems

- 468 Public Water Systems (PWS) have sampled, including all 20 of the largest PWS
- Of the PWS that have tested:
  - 37 detected PFAS6 > 20 ppt
  - 10% (605,679) of the population is served by a PWS that have or previously had PFAS6 > 20 ppt
  - 1.8% (106,385) of the population is served by PWS with PFAS6 levels currently over 20 ppt
  - Community Systems providing water to the public with PFAS6 > 20 ppt are: Ayer, Dudley, Acton, Topsfield, Tyngsboro Colonial Heights Condo, Easton, and Randolph/Holbrook.
  - Others able to take immediate or interim action

MassDEP Story Map



https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas

Targeted Private Well Sampling and Potential Sources of PFAS

- GIS analysis of landfills and potential sources of PFAS contamination
- Tool for targeting sampling of private wells in the 84 towns where greater than 60% of the population are served by private wells
- May help identify upgradient sources of contamination and potential responsible parties

PFAS & Wastewater

PFAS in Wastewater: Context

- MA not delegated state under National Pollutant Discharge Elimination System (NPDES)
- EPA laboratory method in development
- No EPA National Effluent Guidelines
  - Needed for EPA to establish PFAS limits
- No State Surface Water Quality Standards 314 CMR 4.05 (5)(e)
  - Numerical Standards: potentially expensive, intensive multi-year data effort
  - Authority
    - "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife."
    - "Human Health Risk Levels. Where EPA has not set human health risk levels for a toxic pollutant, the human health-based regulations of the toxic pollutant shall be in accordance with guidance issued by the Department's Office of Research and Standards."

MassDEP

EPA/MassDEP PFAS Permit Requirements for Municipal and Industrial Discharges

- Monitoring
  - Municipal WWTPs
    - Quarterly influent, effluent, and sludge samples
    - Annual effluent samples from industrial facilities discharging to WWTP
  - Industrial
    - Quarterly effluent samples

- Timing
  - Conditions go into effect 6 months after EPA's multi-lab validated method for PFAS in wastewater is made available

MassDEP's Additional PFAS Conditions in Wastewater Permits

- Industrial Dischargers' Permit Source Reduction
  - Within 6 months of effective date of permit must evaluate use of PFAS-containing products and whether use can be reduced or eliminated
- Timing
  - Most facilities: monitoring begins 6 months after EPA's multi-lab validated method for PFAS in wastewater is available, **or 2 years from the effective date of the permit**, whichever is earlier
  - For facilities discharging upstream of drinking water intakes, effluent monitoring begins **180 days** after the effective date of the permit

Technical Assistance for Industries

- EEA Office of Technical Assistance to work directly with industrial dischargers and industrial facilities discharging into municipal WWTPs
- Identify potential PFAS users and offer free and confidential technical assistance on pollution prevention
- Prioritize facilities discharging upstream of drinking water supplies
- Initial phase underway focusing on approximately 30 different facilities (combination of direct and indirect dischargers)

PFAS & Residuals

PFAS in Residuals: Context

- Wastewater residuals: 38% reused as fertilizer in MA
- MassDEP regulates 35 entities that land apply residuals
- PFAS Testing: quarterly requirement for residuals that are land applied (as of July 2020)
- No EPA lab method; MassDEP approves individual methods
- No land application standards; MassDEP evaluating options and consulting with stakeholders
- Alternative disposal alternatives include landfill, incineration, export
- Policy issues
  - Impacts of PFAS on water, crops, biota
  - Impacts of regulating reuse and reuse market disruption

PFAS in Residuals: MassDEP Actions

- Stakeholder Process
  - Industry groups, AOS holders, environmental advocacy organizations, health advocacy organizations, academic researchers, agriculture groups, and other state agencies
  - First meeting held in September. Gathering information and perspectives
- Technical work underway
  - Leachate model
  - Review of others' research/coordination with other states
  - Technical subcommittee meeting
  - Establish screening values
- Goal: develop interim screening levels

PFAS & Surface Waters

PFAS in Rivers: Monitoring & Characterization

- MassDEP partnering with U.S. Geological Survey
- Collected and analyzed riverine water samples for 24 PFAS compounds
- Sampling sites upstream and downstream of wastewater treatment facilities, downstream of industrial areas, and where no known PFAS sources are expected
- 3 rounds of monthly sample collection
- Report expected early in 2021

Other PFAS Efforts

Anvil 10+10 PFAS Testing

- Adult mosquitocide used for EEE spraying
- PEER (NGO) tested samples and detected PFAS
  - Unexpected as all PFAS uses in pesticides reported to be phased out
  - Manufacturer reports no added PFAS
  - EPA confirmed no PFAS with active registrations for pesticide use
- EPA conducted testing on containers, which were determined to be the source