



We work with others to protect the health of the people of Washington State by ensuring safe and reliable drinking water.



SURPRISES THAT CAN COST BIG BUCKS - WHAT'S NEXT?

Washington State Department of Health
Office of Drinking Water

Drinking Water "Surprises" in 2019

- Algae and Algal Toxins
 - Questions – Ask Nancy Feagin or Teresa Walker
- Lead and Copper Rule Revisions (LCRR)
 - Questions – Ask Kay Rottell or Matt Hadorn
- Per- and Polyfluoroalkyl Substances (PFASs)
 - Questions – Mike Means
- Risk and Resilience Assessments – EPA coordinated
 - Questions – Ask Johnny Clark (EPA Region 10)

Algae and Algal Toxins

Algal Toxins—Short-Term Toxicity

Compound	LD50 (ug/kg)
Strychnine	2000
Microcystin LR	50
Cobra Venom	20
Anatoxin-a(s)	20
Saxitoxin	9

Algal Toxins—The Big Picture



EPA Health Advisories (June 2015)

- EPA Health Advisory Levels (HAL) for algal toxins
 - Microcystins
 - 0.3 ug/L for children less than six years old
 - 1.6 ug/L for general population
 - Cylindrospermopsin
 - 0.7 ug/L for children less than six years old
 - 3.0 ug/L for general population

However, An Ounce Of Prevention...

Risk	History of Cyanobacteria	Water Temp (°C)	Total P (ug/L)	Thermal Stratification
Very Low (Good)	No	<15	<10	No
Low	Yes	<15-20	<10	Infrequent
Moderate	Yes	20-25	10-25	Occasional
High	Yes	>25	25-100	Frequent & Persistent
Very High (Poor)	Yes	>25	>100	Frequent & Persistent/Strong

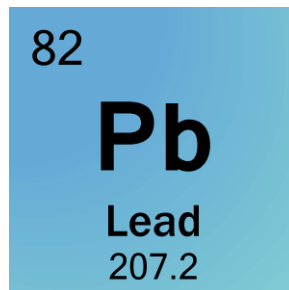
Unregulated Contaminant Monitoring Rule 4 (Algal Toxins)

- UCMR4
 - Proposed - December 2015
 - Finalized - December 2016
 - Monitoring – Mar. 2018 to Nov. 2020
 - All surface water systems serving more than 10,000 people
 - A limited number serving 10,000 or fewer people
 - Sample 2x/month for 4 consecutive months

UCMR4—Lessons to Date

- Coordinate and communicate with wholesale suppliers (as applicable)
- EPA Method 546 (ELISA)—Minimum Reporting Limit (MRL) for microcystins is at the Health Advisory Level (HAL) (0.3 ug/L)
- Sampling requirements are complex
- Analyze confirmation sample(s) if needed

Lead (and Copper) Rule Revisions



Lead and Copper Rule—Long Term Revisions

- EPA—National Review of LCR issues (2004)
- EPA—Drinking Water Lead Reduction Plan (2005)
- LCR Working Group to NDWAC Report (Aug. 2015)
- EPA LCR Revisions White Paper (Oct. 2016)
- Proposed LCR Revisions released (Oct. 10, 2019)

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Lead Service Lines (LSLs) & Lead Goosenecks (LGNs) - Update

- Governor's Directive 16-06
 - Signed May 2, 2016
 - Broad direction to state agencies on lead
 - Established goal: remove all LSLs and LGNs in WA State by May 1, 2031 (within 15 years)
 - Initial Estimates (early 2017):
 - LSLs - 5 systems (916); LGNs – 15 systems (6,370)
 - Latest Review (late 2018)
 - LSLs - 1 system (300); LGNs – 14 systems (4,840)
- Lead Service Line Replacement Resources
 - AWWA Standard C810-17
 - Lead Service Line Replacement Collaborative (LSLRC)

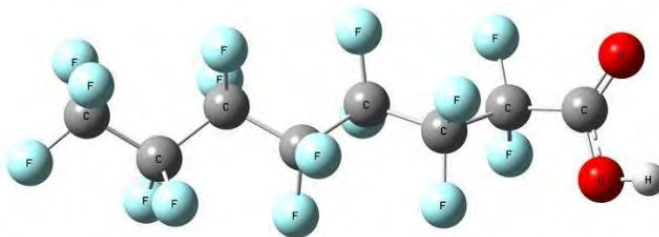
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LCR Revisions—Overview

- New lead trigger level (TL) of 10 ppb. If exceed TL:
 - Conduct annual lead and copper tap samples at standard number of sites
 - Have lead service line replacement program
 - Assess treatment (re-optimize)
- Update to Tier sample site selection and sample collection procedures
- Sanitary surveys - review corrosion control treatment and water quality parameter assessment
- Require systems to conduct "find and fix" for individual sites that exceed the lead action level (15 ppb)
- More rapid PN and notification of homeowners
- Lead Service Line Replacement - Inventory updated annually

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PFASs



Per- and Polyfluoroalkyl Substances (PFASs)

- Used in many products since the 1950s because of their special properties
 - Stain, oil, and water repellent
 - Fire suppressant
- Break down slowly and last a long time in the body and environment
- Globally distributed and detected in people, wildlife, and fish

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PFAS—Common Uses



PFAS Exposure

- Widespread—98% of the U.S. population tested had PFAS in blood
- Mostly ingestion: food, dust, water, and air
- Not significant though skin contact, inhalation while bathing, or washing hands
- Ground water—areas near historic use of aqueous film forming foam (AFFF) or chemical plants

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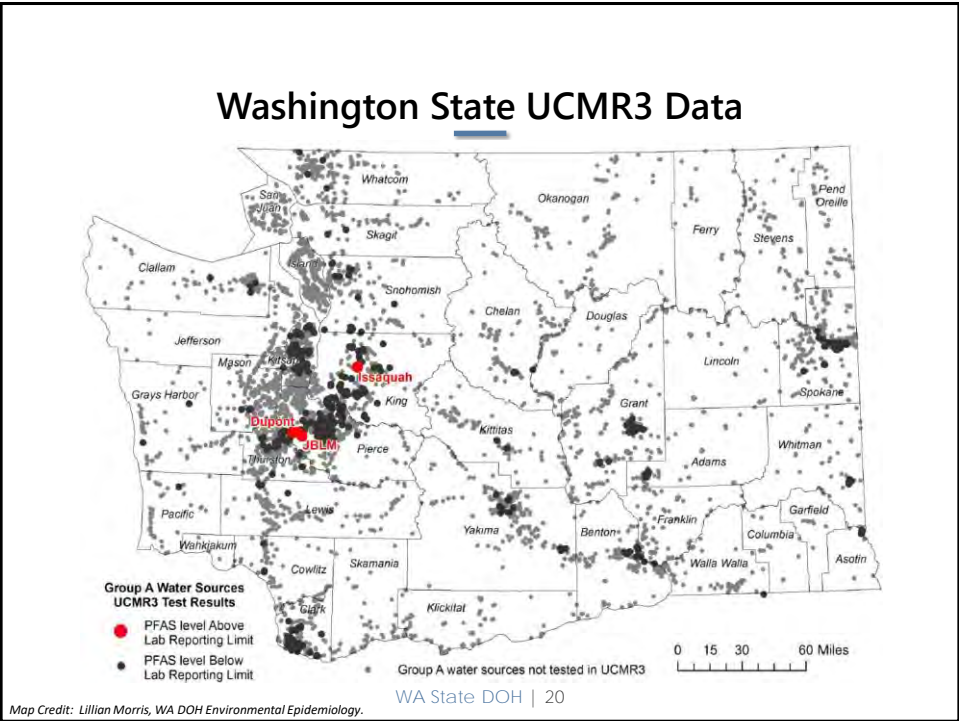
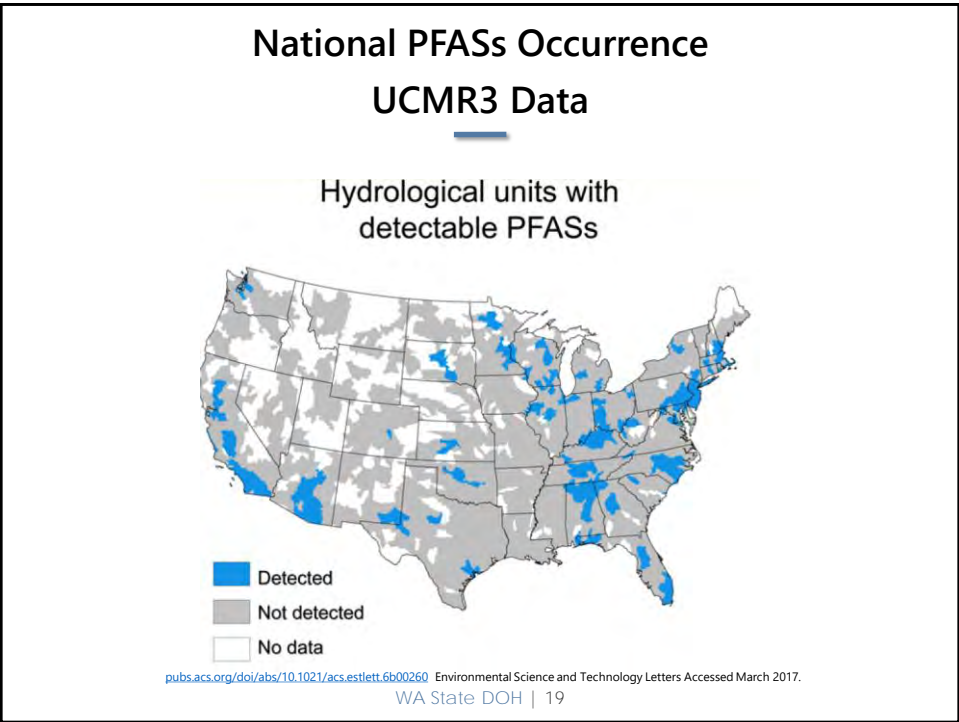
Lifetime Health Advisory Level (Drinking Water)

- May 2016: 70 parts per trillion (ppt)
 - Provides a margin of protection (even for sensitive populations) against adverse health effects associated with PFOS* or PFOA,** even for life-long exposure—EPA
 - Assumes 20% of exposure from drinking water
- EPA Advisory; non-enforceable

*PFOS = *perfluoro-octanesulfonic acid*

**PFOA = *perfluoro-octanoic acid*

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PFAS—State Actions

- Legislative or regulatory action in many States
 - CA, CO, MA, MI, MN, NC, NH, NJ, PA, VT and others
- In Washington State:
 - In response to a petition in 2017, SBoH approved work on revisions to Group A regs to address PFASs in drinking water in August 2018.
 - Develop State Action Level (SAL) process in Chapter 246-290 WAC
 - Next steps (see “Rulemaking” webpage):
 - Update to SBoH – Nov. 11, 2019
 - Stakeholder workshops – Dec. 2019
 - ◆ Tacoma (12/2) ; Mount Vernon (12/3); Spokane (12/4)
 - Final Rule – Latter half of 2020

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EPA Risk and Resilience Assessments

- All hazards risk assessments, certification and plans for community water systems (CWS) over 3,300 population (§2013)
 - Certification **to EPA** by
 - 3/31/2020—CWS serving 100,000 or more people
 - 12/31/2020—CWS serving 50,000 to 99,999 people
 - 6/30/2021—CWS serving 3,301 to 49,999 people
 - Recertification every 5 years.

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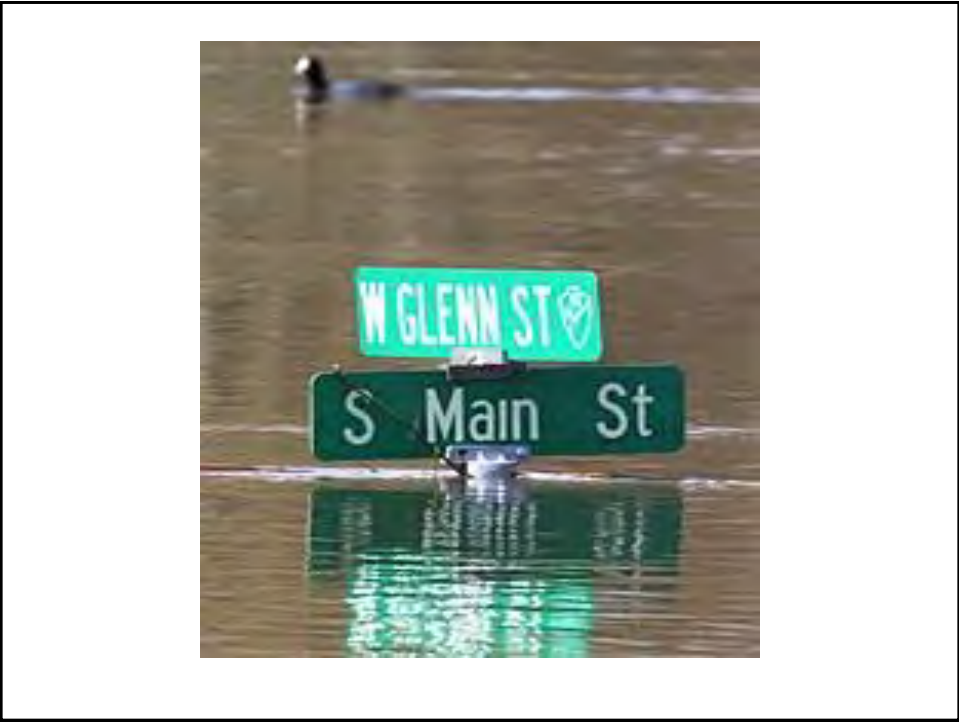
Speaking of surprises...













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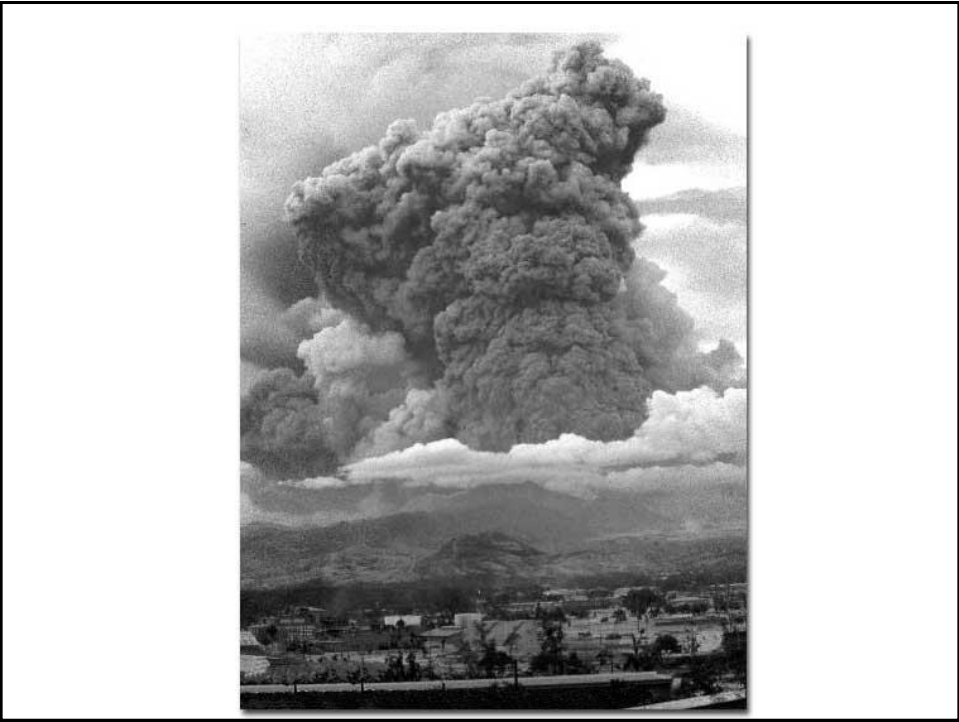
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Blackout Brings Water Crisis to Cleveland



CLEVELAND (AP) -- From beauty salons to hospitals, Clevelanders resorted to bottled water Friday after an epic power outage sparked **the city's worst-ever water crisis.**









What (un)natural disasters are
you thinking about?

Emergency Response Plans (EPA Requirement)

- Need to be prepared or updated based upon risk and resilience assessments (RRAs) for community water systems (CWS) over 3,300 population
- ERP certification **to EPA** by 6 months after RRAs due
 - 9/30/2020—CWS serving 100,000 or more people
 - 6/3/2021—CWS serving 50,000 to 99,999 people
 - 12/31/2021—CWS serving 3,301 to 49,999 people
- Lots of resources available


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Emergency Preparedness and Response Resources

- EPA Incident Action Checklists for Water Utilities
 - Cybersecurity, Drought, Earthquakes and much more
 - Prepare, Respond, Recover approach
- DOH "Emergency" Webpages
 - Drought
 - Emergency Response Planning Guide (DOH Pub. 331-211)
 - Wildfires
 - Water Quality Issues (Coliform, Loss of Pressure, Surface Water, etc.)
- WAWARN (WA Water/Wastewater Area Response Network)
 - Water system mutual aid system; Free to register and connect

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WAWARN Website



The Washington Water/Wastewater
Agency Response Network

[Mutual Aid Agreement](#)
[Member List](#)
[Committees](#)
[Membership Applications](#)
[Resources](#)
[Cybersecurity Fundamentals](#)
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WAWARN: Utilities Helping Utilities

2018 WAWARN Chairs Meeting

WAWARN is a Water/Wastewater Agency Response Network that allows water and wastewater systems to receive rapid mutual aid and assistance from other systems in an emergency. Utilities sign the WAWARN standard agreement which then allows them to share resources with any other system in Washington that has also signed the agreement.

[Announcing WAWARN mutual aid website service](#)

EPA has developed a new video to increase water sector awareness of the Water/Wastewater Agency Response Network (WAWARN) initiative and attract new members to existing WAWARNs. Entitled "WAWARNs in Action", the video illustrates the types of events in which the mutual aid networks have been utilized and emphasizes the importance of water sector coordination during an emergency. Interviews with WAWARN representatives provide detail on particular benefits of WAWARN, explaining how the programs have reduced response time and saved utilities money during emergencies.

The video can be found on the WAWARN Home tab of the [Office of Water's Mutual Aid and Assistance webpage](#).

How to Join WAWARN

If your utility hasn't filled out the membership application:

1. Click on [Membership Application](#) to register your utility as a member and you will receive a confirming email.
2. After confirming your email, return to WAWARN, login and complete your [full Utility Profile](#).
3. Have your Mutual Aid Agreement signed either online or via paper copy. Submit paper copy to WAWARN, %Water/Irrigation, 2301 Fruitvale Blvd, Yakima, WA 98902.
4. Download the materials and attend local training provided by WAWARN on activation procedures.

For more information, please contact your regional or statewide chair (contact info on [Committees page](#))

[Mutual Aid Agreement - PDF](#)
[WAWARN Operational Plan](#)
[WAWARN Brochure](#)

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DWSRF Construction Loans to Address Risks

- All projects scored and ranked based on health risk being addressed.
- Five risk categories.
 - Risk Category 1 the highest ranking category- addresses documented microbial risk
 - Risk Category 2 second highest ranking category- addresses exceedance of primary inorganic contaminants and PFOS/PFOA
- Based on project score and ranking, the highest scoring projects are funded until all funds have been exhausted.

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Construction Loans

- See Appendix A of the DWSRF Construction Loan Guidelines for scoring information.
- Guidelines available online at doh.wa.gov/DWSRF.



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DWSRF Construction Loans: Risk Category 1

- Projects to address microbial risk
 - Coliform, surface water, reservoir replacement, disinfection
- Cyanotoxins (blue-green algae) – Exceedance of EPA HRLs
 - 0.3 micrograms per liter for microcystins.
 - 0.7 micrograms per liter for cylindrospermopsin.



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DWSRF Construction Loans: Risk Category 2

- Projects for nitrate, arsenic, and other primary MCL source contaminants.
- Corrosion control projects for lead and copper.
 - Funded packed tower aeration plant for Olympia to raise pH
- PFOS, PFOA, PFHxS, PFNA, and PFHpA combined above 70 ppt.
 - Funded new reservoir for Spokane to serve Airway Heights due to presence of PFASs in Airway Heights' wells



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DWSRF Construction Loans: Risk Category 3

- Removal and replacement of lead service lines and goosenecks.
 - Provide documentation through historic records, age of house.
 - All work eligible for reimbursement if done within 500 feet of lead service line or gooseneck replacement. Includes water mains, replacement of service line from main to meter, hydrants, valves.
 - Funded project with City of Auburn to replace goosenecks.

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DWSRF Construction Loans

- Applications accepted October 1 – November 30, 2019.
- DWSRF has an informational table in the Exhibitor's Hall
- Checkout the website:
 - doh.wa.gov/DWSRF or search for DOH DWSRF.
- Email: DWSRF@DOH.WA.GOV.



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Next surprises in drinking water?

- America's Water Infrastructure Act of 2018 (AWIA)
 - Near term – Risk & Resilience Assessments; ERPs
 - Longer term – CCR updates, UCMR5 (PFASs; more PWSs)
- Manganese
 - Increasing awareness of health effects of too much
 - EPA Health Reference Level - 300 ug/L
 - Health Canada and Minnesota Guidelines – 100 ug/L
- Perchlorate
 - EPA released draft rule - May 23, 2019/June 26, 2019
 - Final rule delayed until at least June 2020
 - Beyond monitoring, don't expect an impact in WA

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Wrap-up

- Algal Toxins: UCMR4 monitoring; Surprises ahead?
- Emergency Response
 - A little planning is better than none
 - Resources available
- Lead and Copper Rule:
 - EPA recently released revisions
 - Update service line inventories
- PFASs: On-going local, state and national actions
- AWIA, Perchlorate and Manganese
 - Potential impacts variable and uncertain

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Questions?



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