



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director

PFAS Expert Advisory Committee (PEAC) Meeting Minutes
from the November 8, 2024 Meeting

The Virginia Department of Environmental Quality (DEQ), in consultation with the Virginia Department of Health (VDH), held the first PFAS Expert Advisory Committee (PEAC) meeting beginning at 1:00 pm on November 8, 2024, at 1111 E. Main Street, Bank of America Building, 3rd Floor conference room, Richmond, VA 23219. The PEAC was established by section 62.1-44.34:33 of the Code of Virginia. The committee's purpose is to assist the DEQ in identifying PFAS (Per- and Polyfluoroalkyl Substances) sources through PFAS assessments and associated monitoring and reporting, public and private lab testing capacity issues, and options for reducing PFAS in source waters causing exceedances of PFAS MCLs (Maximum Contaminant Levels). The committee's meeting was advertised on Virginia Regulatory Town Hall and open to the public. The slides presented at the meeting are available on Virginia Regulatory Town Hall.

PEAC members in attendance:

Table with 4 columns and 5 rows listing PEAC members in attendance, including names and organizations such as Jen Cobb (Newport News Waterworks), Kyle Malone (Micron Technology Inc.), Chris Peot (D.C. Water), and JP Verheul (Enthalpy Analytical).

PEAC Members Absent:

John Aulbauch Aqua Virginia	Dr. Kang Xia Virginia Polytechnic Institute and State University
Mark Romers ITAC Water Technologies	

Staff in Attendance

Joseph Bryan, VPDES Permit Supervisor, Office of VPDES Permits, DEQ	Scott Morris, Director, Water Division, DEQ
Brandon Bull Policy, Director of Policy, DEQ	Zach Pauley, Manager, Waste, Land Division, DEQ
Erica Duncan, Manager, Office of VPDES Permits, DEQ	Kathryn Perszyk, Director, Land Division, DEQ
Robert Edelman, Director, Division of Technical Services, VDH	Tish Robertson, WQS Scientist, Water Planning Division, DEQ
Heather Esposito, Administrative Assistant, Water Planning Division, DEQ	Rebecca Rochet, Deputy Director, Water Permitting Division, DEQ
Riley Isaacs, Permit Writer, Office of VPDES Permits, DEQ	Jeanette Ruiz, Regulatory Analyst, Water Division, DEQ
Meghan Mayfield, Director, Water Permitting Division, DEQ	Bryant Thomas, Manager, Office of Ecology, Water Planning Division, DEQ
Liz McKercher, Director, Water Planning Division, DEQ	Robert Wheeler, PFAS Program Coordinator, Water Planning Division, DEQ

Interested Members of the Public

Pat Calvert VCN	Joe Dinardo	Devon Scallan Aqua Virginia, Inc.
Carroll Courtenay, SELC	Mike Martin HRSD	Kyle Shreve Va Biosolids Council
J. Dinardo	Chris Pomeroy AquaLaw	

Meeting Opening and Introductions

The meeting was opened by Bryant Thomas from DEQ with introductions and an overview of the committee's purpose, role, and reporting requirements. It was also noted that DEQ will be expanding the current agency PFAS web page to include information associated with the HB1085/SB243 legislation. This will include information on the Committee, such as meeting

agendas, minutes and presentations, as well as resources for facilities that will be reporting pursuant to the legislation. Committee members introduced themselves including their background, expertise and experience. The meeting then followed the agenda, which is included as Attachment 1. Discussion summaries are provided below.

Discussion Summary: Overview of work completed/in progress before HB1085/SB243 (VDH and DEQ)

- VDH PFAS Activities Review was presented by Bailey Davis of VDH.
 - Sample study: Phase 1 and 2 with Phase 3 Overview and Preliminary Summary
 - Review of sampling results
 - Overview of Unregulated Contaminant Monitoring Rule 5 and PFAS Data Summary through July 11, 2024
- DEQ Water Monitoring efforts were presented by Bryant Thomas
 - Overview of Efforts to Monitor the Occurrence and Distribution of PFAS
 - 2021: Initial DEQ PFAS monitoring in support of investigation from information provided to DEQ by Newport News Waterworks in the middle Chickahomony River watershed. Included surface water, sediment and fish tissue sampling.
 - 2022: Monitoring of areas with background concentrations and areas of concern which included: continued fish tissue sampling in the Chickahominy River watershed, follow-up from VDH sampling, Roanoke River GenX study, and suspected or known sources of PCBs (polychlorinated biphenyls).
 - 2023: Surface water monitoring at DEQ stations in all major river basins (243 stations), Groundwater monitoring at 11 wells, fish tissue sampling sites included the Rappahannock, Roanoke, Chowan, James, and Big Sandy River Basins; Continued special monitoring studies in the Roanoke River and Middle Chickahominy River
 - 2024: PFAS analysis in water and fish tissue by Virginia Division of Consolidated Laboratory Services, fish tissue studies in the Middle Chickahominy River and Occoquan River basins; Surface water samples from approximately 100 freshwater and estuarine probabilistic monitoring sites; Fish tissue sampling at sites primarily in the James, Potomac/Shenandoah, and Roanoke basins.
 - 2025: Future/planned activities include continuing with the fish tissue collections in basins which have not been sampled; Surface water collections to support PFAS assessments consistent with recent legislation.
 - Question—committee—what are the fish tissue levels? Are they elevated? DEQ indicated that it is collecting the data and working with VDH on evaluating the observed levels in fish and what may be considered elevated. It was also noted that DEQ fish sampling aims to collect fish from all trophic levels at a monitoring station and that edible fillets are analyzed. Other committee members indicate very high levels of PFAS found in their research, published data and unpublished.

It was noted that freshwater clams are being used as indicators. Discussion follows about the importance of tissue samples, what it indicates, how the data is used.

Discussion Summary: Legislative Overview (DEQ)

DEQ's Policy Director, Brandon Bull, provided an overview:

- Legislative history and precursors of PFAS legislation before 2024
- Enactment of 2024 PFAS legislation- HB1085 & SB243
- Statutory requirements for public meetings and public bodies
- Requirements of the Virginia Freedom of Information Act (FOIA) were discussed in the context of public bodies such as the PEAC. The Committee was informed that if three or more committee members are discussing business of the PEAC, that constitutes a public meeting subject to FOIA requirements. Business of the PEAC is that which is established in the legislation. Accordingly, committee members were advised on how group communications are to occur; namely, that Dr. Robert "Max" Wheeler will communicate with the PEAC with blind copied (e.g., Bcc) correspondence. Committee members who want to share information with the PEAC should respond directly to Dr. Wheeler and he will distribute the information.

Discussion Summary: Status of Implementing HB1085/SB243 (DEQ)

Dr. Robert Wheeler provided an overview of the activities undertaken and in progress to implement the recent legislation.

- Status of implementing HB 1085/S243
 - July 1 VDH data transfer
 - VDH shared data it collected from 274 water works tested for PFAS from 2021 – 2023; 16 water works showed an MCL Exceedance; 2.5 million people served by those water works.
 - Additional self-reported data from four counties and data from the Fifth Unregulated Contaminant Monitoring Rule (UCMR5) were shared.
 - In total, VDH notified DEQ of 28 water systems with exceedances. This includes systems with source water of either surface water (e.g., reservoirs, river intakes) and groundwater.
 - Staffing
 - DEQ received funding for three positions, two of which have been filled. The third position is currently in recruitment.
 - Committee membership and meetings
 - The process for identifying and confirming membership on the PEAC is nearly complete. While an invitation was extended to a candidate representing a conservation organization, the invitation was declined.

DEQ is currently working to identify a member to provide expertise from that perspective as required by the legislation.

- Annual Report
 - An annual report was filed pursuant to October 1 date required by the legislation.
- October 1 VDH Data Transfer was received by DEQ.
- PFAS planned actions looking forward
 - December 1, 2024 - the date by when DEQ is required to send notification to facilities required to self-report the use or manufacture of PFAS and conduct PFAS monitoring under the statute
 - Early December 2024 – Second meeting of Expert Advisory Committee
 - January 1, 2025- prioritization plan developed
 - Spring 2025 – Third meeting of Expert Advisory Committee
 - Summer 2025 – Fourth meeting of Expert Advisory Committee

Bryant Thomas led a discussion of the enactment provision of the legislation concerning the self-reporting of the use or manufacture of PFAS and monitoring for PFAS.

- The legislative enactment provision was reviewed and Mr. Thomas provided an overview of the legislative requirements for PFAS self-reporting, and for PFAS monitoring
- The process DEQ has undertaken to identify facilities which will receive notification to self-report PFAS use and manufacture as well as perform PFAS monitoring was reviewed.
 - The list of facilities has not yet been finalized.
 - The final list of facilities that receive notification will be shared at the second meeting of the PEAC.
 - Mr. Thomas posed a question to committee members on whether potable water treatment plants should be included for consideration of PFAS monitoring. While these facilities do not add or introduce PFAS, it is possible that PFAS could be concentrated in the production of drinking water and facility wastewater may be considered a source of PFAS. After discussion, it was suggested that this source category may be considered at a later date and not necessarily included in the first round of notifications to be sent by December 1, 2024. There will be opportunities during PFAS assessments to consider additional sources of PFAS which may not be identified in the initial notifications. DEQ staff indicated they would consider options and follow-up with the Committee at the second meeting in December.
 - One Committee member questioned whether the legislation establishes authority for DEQ to require monitoring of all source categories identified in the presentation, specifically wastewater treatment plants and potable water treatment plants. DEQ will review the legislation as well as DEQ's authorities in other sections of the Code, and follow-up at a future meeting of the Committee.
 - Other topics for discussion included challenges in identifying sources and atmospheric deposition as a potentially significant source of PFAS. DEQ staff

indicated they will look into whether the legislation or other sections of the Code provide authority to look at these types of sources and may invite staff from the Air Division to engage in conversations and PEAC meetings in the future.

Discussion Summary: A Framework for Prioritization Planning

Dr. Wheeler facilitated a discussion among Committee members on a framework for prioritization planning for conducting PFAS assessments to identify sources of PFAS in public water systems. The goal of the conversation was to solicit input from Committee members on various factors that may be considered which DEQ staff would evaluate and incorporate into a proposed prioritization plan for review and discussion at the second meeting of the PEAC. The conversation included:

- Overview of statutory requirements for the framework
- Review of strategies employed by other states with developed frameworks: Arizona, Maryland, North Carolina.
- Methodology question for the committee: Which approach should DEQ take to quantify public health impacts, a tiered approach or a hazard index approach? The Tiered approach assigns a given point value to a range of concentrations. The Hazard Index approach calculates a Hazard Index as $\sum \frac{(C_{PFAS})}{MCL_{PFAS}} * 10$, where the calculated value is used as the score, the multiplication by 10 was an administrative decision to make the score more readable. Discussions described the cons/benefits of each approach. After discussions, the committee's consensus was that it is potentially advantageous to combine the approaches, that is to calculate the Hazard Index but assign points to a range of Hazard Index values rather than using the Hazard Index as a raw metric. Committee members expressed that whichever method is selected, clarity and simplicity in the explanation of the methodology is critical.
- Public health impact question for committee: how should time be accounted for in the methodology? Should DEQ consider averages, individual measurements, or maximum values? It was suggested to consider rolling averages, but also to look at variability. It was also noted that smaller systems will have fewer data points, less resources to conduct investigations and likely less experience. It was also pointed out that DEQ should account for work and investigations that have been completed or are underway. This may recognize that larger systems, which may rank as high priority, may be further along in conducting source assessments. There may be a range or continuum of the level of resources and assistance needed in identifying significant sources of PFAS and moving towards corrective action. The committee agreed that more discussion is needed on this topic. It will be addressed again during the next committee meeting.
- Drinking water supply characteristics:
 - Customers: should larger or smaller systems be weighted more? It was pointed out that prioritizing larger systems may provide more return on effort, however, smaller systems will generally need more help so perhaps DEQ should weight

them heavier. Additionally, it was noted that larger public water systems may have alternate resources for source water supply and may be able to switch supplies or resources. Additionally, some of the systems identified as exceeding thresholds may not currently be online today. Lastly, there it was noted that perhaps surface water systems and groundwater systems might be classified or considered differently. It may be easier to move or change well locations than to change the source of surface waters.

- Environmental justice (EJ) screening tools discussion: Climate Justice Screening tool, EJScreen, and VA EJScreen+
 - Dr. Wheeler noted that DEQ does not currently have service area information to fully assess possible EJ factors. There were no concerns from the Committee members present in providing service area information.
 - Regarding how information might be aggregated, such as by census tract, it was suggested to keep the process as simple as possible. Additionally, it was noted that there may be additional EJ factors other than the poverty level to consider. It was suggested to review the EPA affordability metric on water rates. DEQ EJ staff will also be included in conversations.
- System engagement
 - As noted above, there may be a range of circumstances among larger and smaller systems regarding the amount of work already completed in identifying possible PFAS sources. Accordingly, the question posed by a committee member was “What support do you need from DEQ”. There may be a spectrum of needs for those systems with elevated levels of PFAS in source waters. Additional considerations raised were whether wholesale distribution should be a factor. Again, the comment was offered to keep things as simple as possible and not overly complicate the process. Lastly, it was suggested to consider the regional water supply plan to look at projected population growth and source waters.
- Other regional systems affected
 - Upstream/Downstream
 - Should other regionally affected systems be considered?
 - Keep it simple
- Environment
 - Water source: groundwater vs surface water
 - A committee member emphasized practicality while noting that while identifying groundwater sources is ideal, it may not be the path to MCL compliance. Even if the source is stopped the PFAS are not going to be cleared from groundwater over the next two years. So, the system is going to have to treat the water for PFAS regardless.
 - Size of watershed

- It was noted that the size of the watershed may be a challenge. For example, the Roanoke River watershed is very large. What might be the return versus the level of effort in covering an area of this size? Should DEQ consider smaller, more manageable systems? Alternatively, it was noted that the watershed size is not as important as the number of possible sources. Consider what is already known about sources as opposed to a blanket watershed wide approach.
- Reservoirs
 - Should DEQ consider the presence of a reservoir in the systems because of their dynamics where PFAS have long residence times and could concentrate?
- Number of potential significant sources
 - One member thought this would be a good factor to consider. This observation led to a discussion about source identification and differentiation tools to consider.

Public Input

Four interested members of the public addressed the committee. Mr. Joe Dinardo spoke and addressed the public health concerns of PFAS based on his background in toxicology. Ms. Carroll Courtenay of the Southern Environmental Law Center (SELC) suggested that the full PFAS dataset from the UCMR data be considered for the first round of notifications and not simply limited to PFOS and PFOA. She also requested meetings be live-streamed via the Internet. Mr. Pat Calvert of the Virginia Conservation Network (VCN) spoke and described the importance of conservation organizations participating in this effort and offered to assist the committee find a conservation group member that could represent the conservation community on the committee. He also suggested the PEAC meetings should be livestreamed. Mr. Chris Pomeroy of AquaLaw spoke about being flexible when developing a scoring approach that may be used to evaluate grant applications, and suggested we use judgement to develop a qualitative, discretionary approach.

Action Items

DEQ staff will work to develop a draft prioritization approach in consideration of the discussion and feedback received from the PEAC. The second Committee meeting will allow for review and discussion of the draft plan with a goal on reaching consensus on a plan for implementation in 2025.

Additionally, DEQ committed to following up with the Committee at the December meeting sharing a final list of facilities which receive notification for self-reporting of PFAS manufacture and use and PFAS monitoring. This update will address the question from a Committee member about the authority under HB1085/SB243 to require PFAS monitoring from wastewater treatment plants and potable water treatment plants.

Next Meeting:

It was noted during the meeting that DEQ staff had polled Committee members about scheduling the second meeting of the PEAC during December, and that the meeting date and time would soon be scheduled. Subsequent to concluding the first PEAC meeting, the second advisory committee meeting has been scheduled for December 16th at 1 PM after polling members' availability.



PFAS Expert Advisory Committee

1st Meeting

Virginia Department of Environmental Quality
November 8

Agenda

- Welcome, introductions, and overview
- Overview of work completed/in progress before HB1085/SB243
 - VDH PFAS activities review
 - DEQ water monitoring
- Legislative overview
- Break
- Status of implementing HB1085/SB243
- Framework for prioritization planning
- Public input (not to exceed 30 minutes, 3 minutes per speaker)
- Wrap up

Purpose of the PFAS Expert Advisory Committee

- 2024 legislation – HB 1085 and SB 243 established a PFAS Expert Advisory Committee to assist DEQ and VDH in identifying:
 - PFAS sources through PFAS assessments and associated monitoring and reporting
 - Public and private lab testing capacity issues
 - Options for reducing PFAS in surface waters causing PFAS MCL exceedances
- Reporting requirements



Committee Members - Introductions

Name	Organization	Name	Organization
Michael McEvoy	Western Virginia Water Authority	JP Verheul	Enthalpy Analytical
Jen Cobb	Newport News Waterworks	Mitchell McAdoo	US Geologic Survey
Jamie Bain Hedges	Fairfax Water	Dr. Kirin Emlet Furst	George Mason University
Jamie Mitchell	Hampton Roads Sanitation District	Dr. Kang Xia	Virginia Polytechnic Institute & State University
Brian Stieglitz	Upper Occoquan Service Authority	Bailey Davis	Virginia Department of Health
Ben Shoemaker	Fauquier County Water & Sanitation Authority	Chris Peot	D.C. Water
John J. Aulbach	Aqua Virginia	Alex Mitchum	C&M Industries, Inc.
Erik Rosenfeldt	Hazen and Sawyer	Mark Romers	ITAC Water Technologies
Kyle Malone	Micron Technology Inc.	Rock Vitale	Environmental Standards
Jason Williams	WM Atlantic Landfill	Lynn Gayle	Farmer
Ashley Pierce	Virginia Division of Consolidated Laboratory Services		

Virginia Department of Health Office of Drinking Water VDH PFAS Activities Review

November 8, 2024
Bailey Davis
Chief of Field Operations

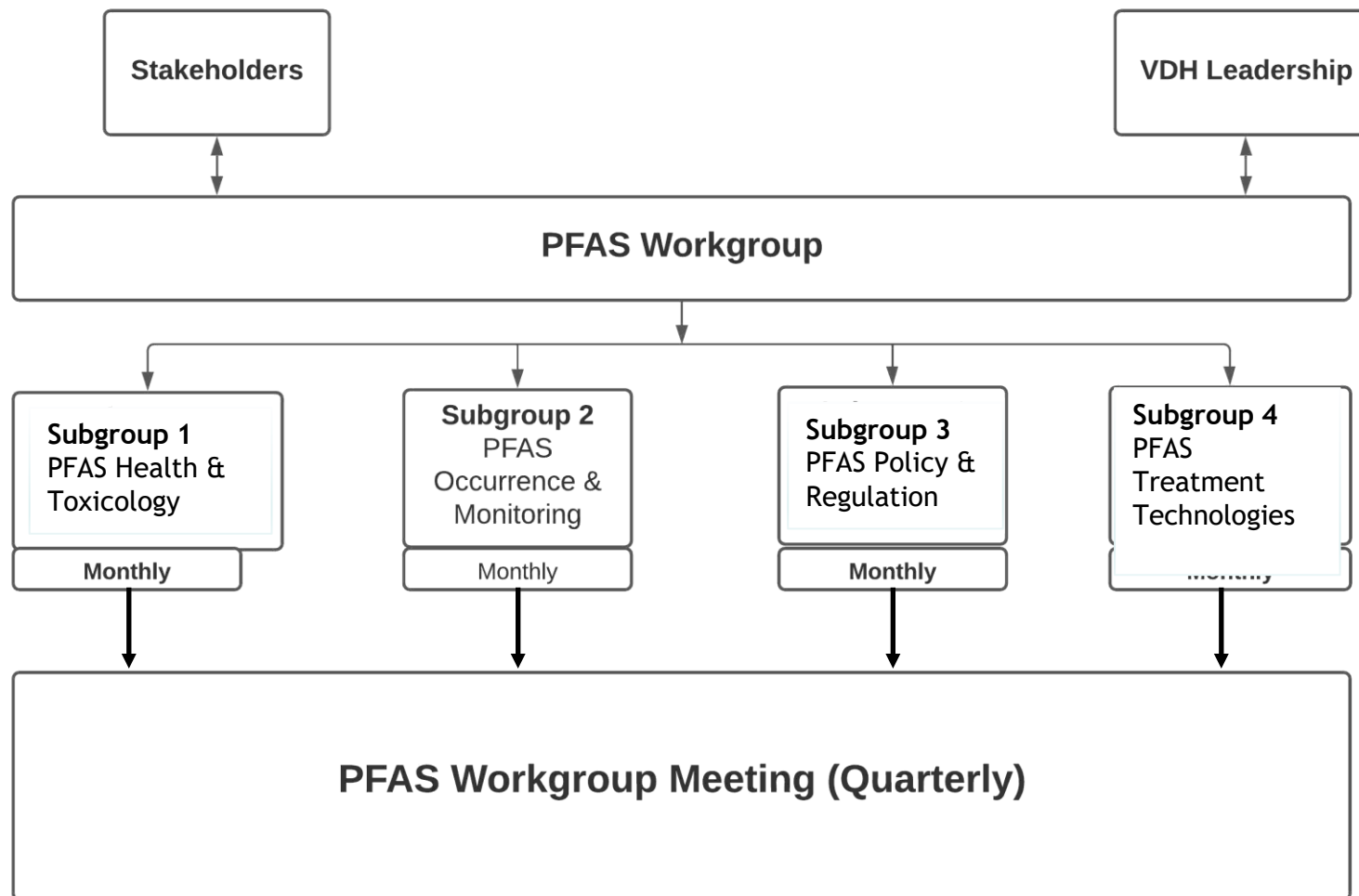


Phase 1 Data Collection

HB586 (2020 Acts of Assembly Chapter 611)

1. Form a VA PFAS Workgroup
2. Conduct a PFAS literature review
3. Conduct a VA PFAS sampling study
4. May make recommendations on setting up MCLs & submit report by December 01, 2021

PFAS Subgroup Functioning & Expectations



Proposed PFAS Sampling/Monitoring Study

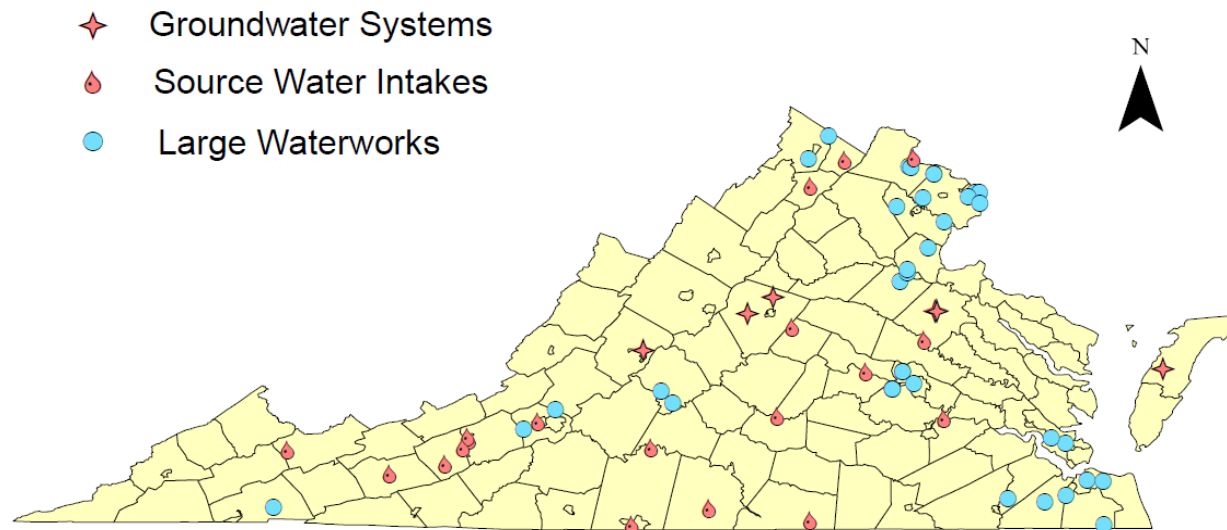
Approaches based on:

- Available funding → number of sampling sites
- Limited to sampling at 50 waterworks
- Maximum public health risk reduction
- Proximity to potential PFAS contamination

Proposed strategy (depends on budget):

1. Largest waterworks (17) in Virginia serve appx. 4.5 million consumers
2. Sampling - based on potential for PFAS contamination - VDH - DEQ data/risk maps
3. Major water supplies - James River, Potomac River, etc.
4. Hybrid approach
5. Statewide comprehensive PFAS occurrence study (Not considering in this study)

Virginia PFAS Sample Study Summary



Hybrid approach to capture PFAS pervasiveness in Virginia, with waterworks size and risk of PFAS contamination strongly weighed. For a total of 50 waterworks, this included:

- Finished water from 17 largest waterworks in the state, serving appx. 4.5 million consumers
- 11 waterworks that use groundwater and have wells to withdraw groundwater within 1 mile of potential sources of PFAS contamination
- An additional 22 major water sources potentially impacted by PFAS were selected for monitoring

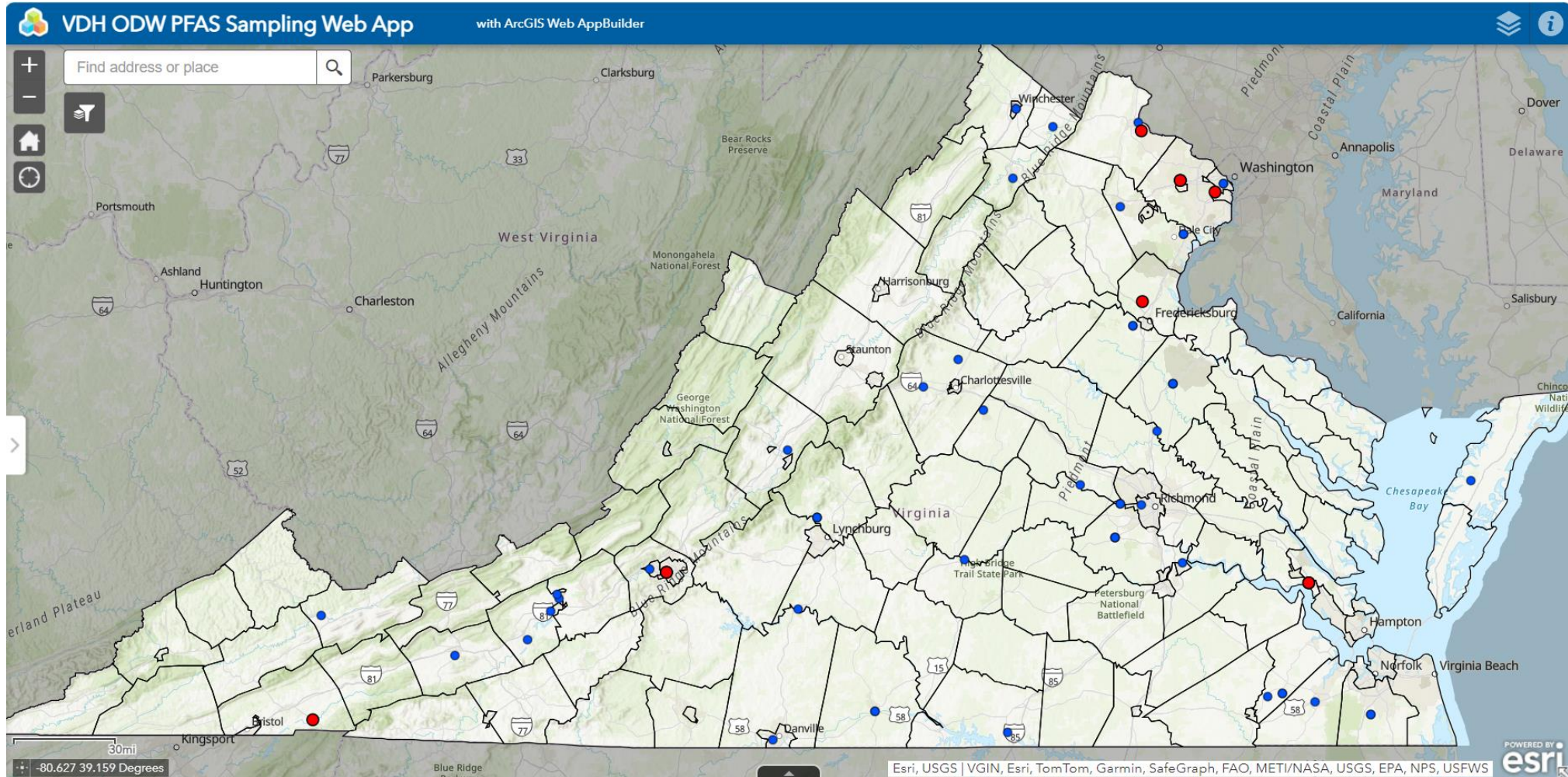
VA PFAS Sampling Study

Water systems participating:	45 vs 50 as planned
Total sampling points:	63 vs 72 as planned
Re sampling:	4 locations
Method used (Drinking Water):	EPA Method 533
Method used (Source Water):	DoD Method

VA PFAS Sampling Results Findings

- All of the samples that had PFAS present above the PQL were from **surface water sources** and all, except one, were entry point samples
- ODW nor DEQ have collected additional samples to identify potential sources of PFAS contamination
- Ten samples from waterworks in the Northern Virginia region had at least one PFAS present in a quantity above the PQL, but none were above EPA's HA level of 70 ppt for PFOA and PFOS (individually or combined) and none exceeded any of the MCLs established by other states, which range from 8 ppt to 14 ppt

PFAS Phase 1 data results



Phase 2 Data Collection

PFAS Sampling Phase 2 Purpose

- To develop additional data on the occurrence of PFAS in Virginia public drinking water supplies
- Help determine the fiscal impact of PFAS
- Support rulemaking to develop maximum contaminant levels for PFAS

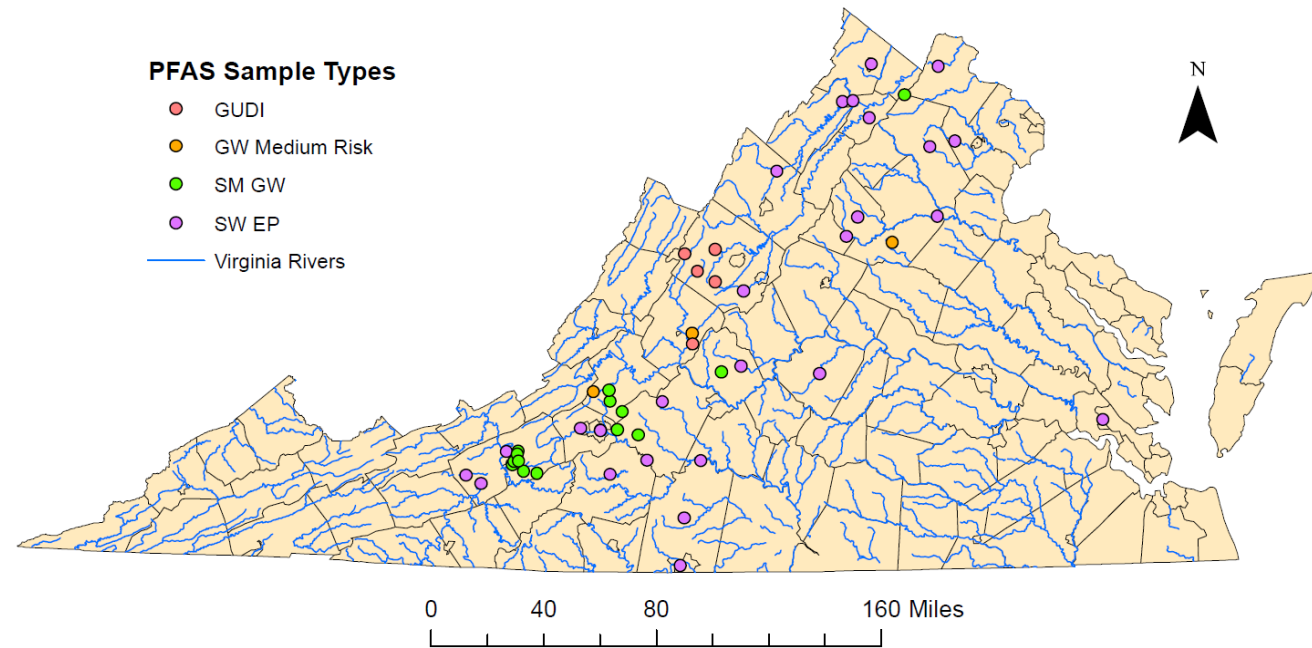
Phase 2 Study Considerations

- Waterworks size and population served
- The location of potential sources of PFAS contamination (developed in conjunction with DEQ)
- The relative risk to consumers who receive water from waterworks that utilize source water that comes from areas that are near known or potential sources of PFAS contamination; and
- Approximately \$232,000 in total funding available from fiscal years 2021 and 2022 EPA grants to study emerging contaminants plus state general funds that could be used to pay for sample analysis.
- 400 sample locations, subject to budgetary limitations.

Phase 2 Study Sample Locations

- ODW identified the following criteria for selecting sites to be part of the Phase 2 Study:
 - Surface water sources at community waterworks;
 - GUDI sources at community waterworks;
 - Groundwater sources at potential risk from PFAS contamination;
 - Groundwater sources at selected small (serving less than 500 persons) community waterworks; and
- VDH prioritized the list of waterworks based on relative risk, considering the waterworks' proximity to the potential sources of PFAS contamination
 - Military or commercial airports (from U.S. Geological Survey data);
 - Unlined landfills (data from DEQ);

Virginia PFAS Phase 2.1 Sampling (2022)



Virginia PFAS Phase 2.1 Sampling (2022)

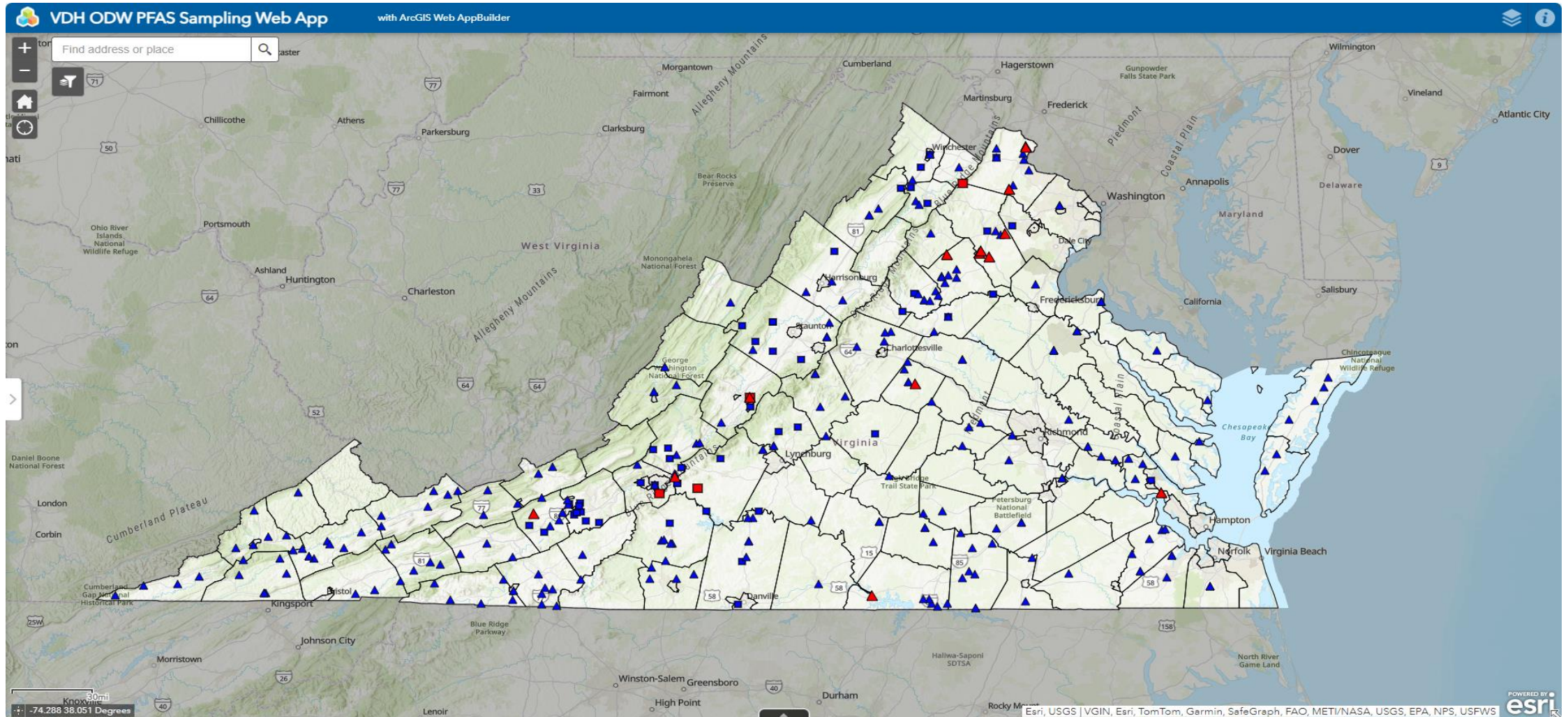
In 2022 VDH completed 45 samples:

PFOA (above 4.0 ppt)	None
PFOS (above 4.0 ppt)	2 detections
Hazard Index:	
GenX (above 10 ppt)	1 detection (same as Phase 1)
PFBS (above 2000 ppt)	None
PFNA (above 10 ppt)	None
PFHxS (above 9 ppt)	None

Phase 2.2 - 2023

- VDH staff collected over 245 samples across Virginia in June 2023
- VDH staff re-collected some samples in September due to lab rejection
- VDH completed QA/QC reviews
- Samples analyzed using EPA 533
- Collection funded using PWSS - emerging contaminant grant

PFAS Phase 2.1 & 2.2 data results



Virginia PFAS Sampling Program

	EPA Limit (ppt)	Phase 1 2021	Phase 2.1 2022	Phase 2.2 2023	Total
PFOA	4.0	4 systems	None	5 systems	9 systems
PFOS	4.0	5 systems	3 systems	9 systems	15 systems
GenX	10	1 system	1 system	None	1 system
PFBS	2000	None	None	None	None
PFNA	10	None	None	None	None
PFHxS	10	None	None	1 system	1 system
Waterworks		45	48	221	274
Population Served		5,226,000	557,000	3,934,000	5,849,000

Phase 3 Data Collection

Phase 3 ODW led sample study

Targeting 400 samples distributed across field offices

Samples to be taken by ODW personnel

Sampling plan to focus on:

- Small or disadvantaged communities (2024)
- Not in UCMR5; completion of Phase 2 sites not sampled
- Past “hits”/Proximity to potential sources

Funding from EPA

- PWSS Grant - Emerging Contaminants
- Emerging Contaminants in Small or Disadvantaged Communities Grant

Phase 3 Preliminary PFAS Summary

Analyte	Criteria parts per trillion (ppt)	Groundwater Sources
PFOA	(above 4.0)	12 systems
PFOS	(above 4.0)	7 systems
GenX	(above 10)*	None
PFBS	(above 2000)*	None
PFNA	(above 10)*	None
PFHxS	(above 10)*	2 systems
Hazard Index >1 (see above*)		1 system

- **174 Samples processed as of 11/4/24**
- **100 systems and 132 entry points sampled**
- **All MCL exceedances on GW systems**
- **13 Systems have at least 1 MCL exceedance**

Unregulated Contaminant Monitoring Rule 5

PFAS and UCMR 5

UCMR 5 monitoring started January 1, 2023 - runs through December 31, 2025

All waterworks 3,300+, plus a “nationally representative sample” of systems < 3,300

Must monitor for 29 different PFAS compounds, plus lithium

- 25 PFAS by Method 533
- 4 PFAS by Method 537.1

UCMR5 PFAS Summary

Data Summary through July 11, 2024

Analyte	Criteria parts per trillion (ppt)	Groundwater Sources	GUDI Sources	Surface Water	Total
PFOA	(above 4.0)	5	None	3	8
PFOS	(above 4.0)	9	1	6	16
GenX	(above 10)*	None	None	None	None
PFBS	(above 2000)*	None	None	None	None
PFNA	(above 10)*	None	None	None	None
PFHxS	(above 10)*	None	None	None	None
Hazard Index > 1(see above*)		None	None	None	None
Waterworks Sampled		21	8	94	114
Sources Sample		63	11	120	194
Population Served		318,353	269,200	5,617,346	5,760,571

Questions?

Bailey Davis

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DEQ Water Monitoring

Bryant Thomas, Office of Ecology Manager

Virginia Department of Environmental Quality

November 8, 2024

DEQ Water Monitoring

- Most of DEQ's monitoring has focused on characterizing the occurrence and distribution of PFAS
- DEQ has supported targeted studies/investigations:
 - Middle Chickahominy River
 - Roanoke River
 - Occoquan Reservoir
- PFAS webpage and dashboard:
www.deq.virginia.gov/PFAS

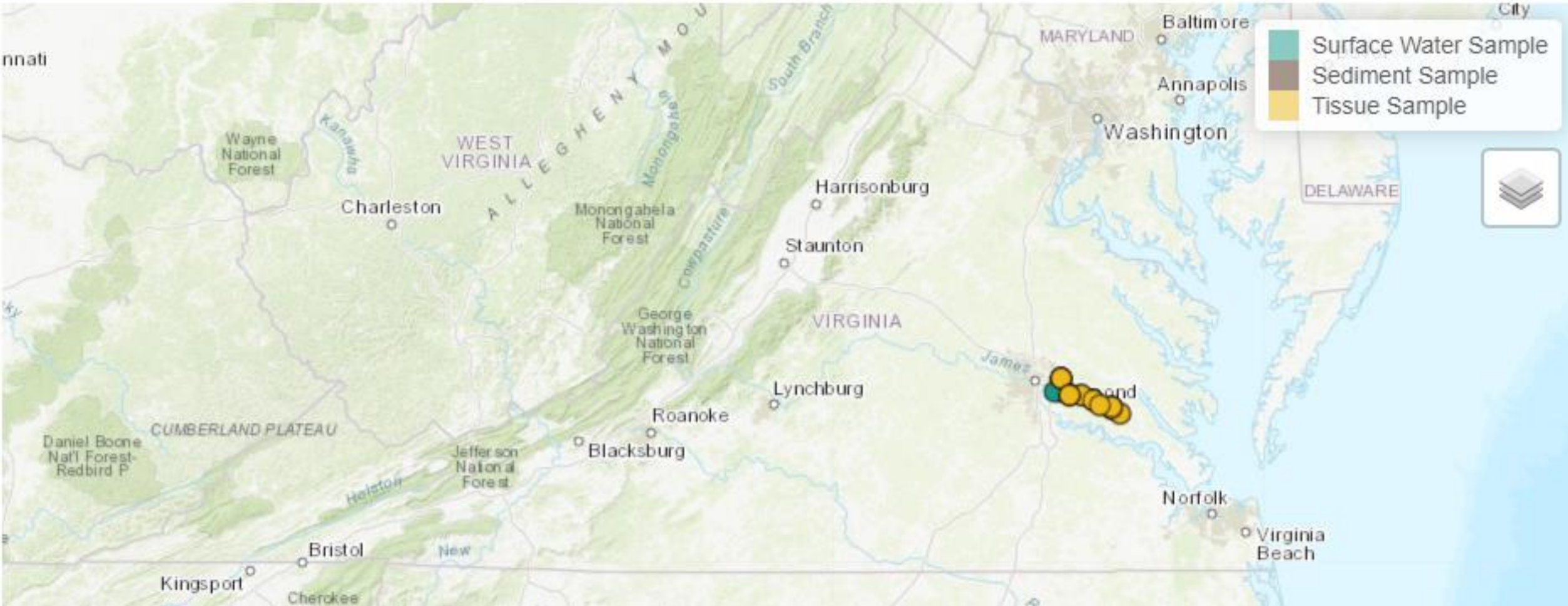


PFAS monitoring - 2021

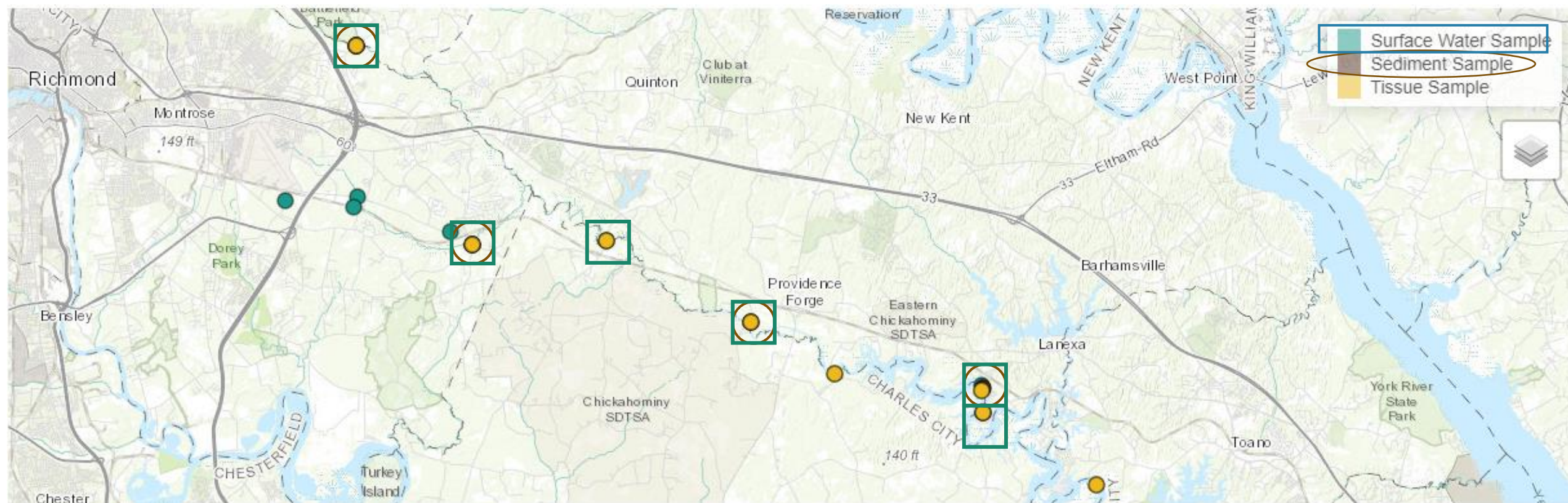
- Middle Chickahominy River Watershed
 - Follow-up to Newport News Waterworks investigation indicating PFOS/other PFAS substances in water samples
 - DEQ collaboration with USGS on special monitoring study
 - **DEQ:** Fish tissue
 - **USGS:** Surface water and riverbed sediment
 - Draft EPA Method 1633 using contract analytical laboratory



PFAS monitoring - 2021



PFAS monitoring – 2021

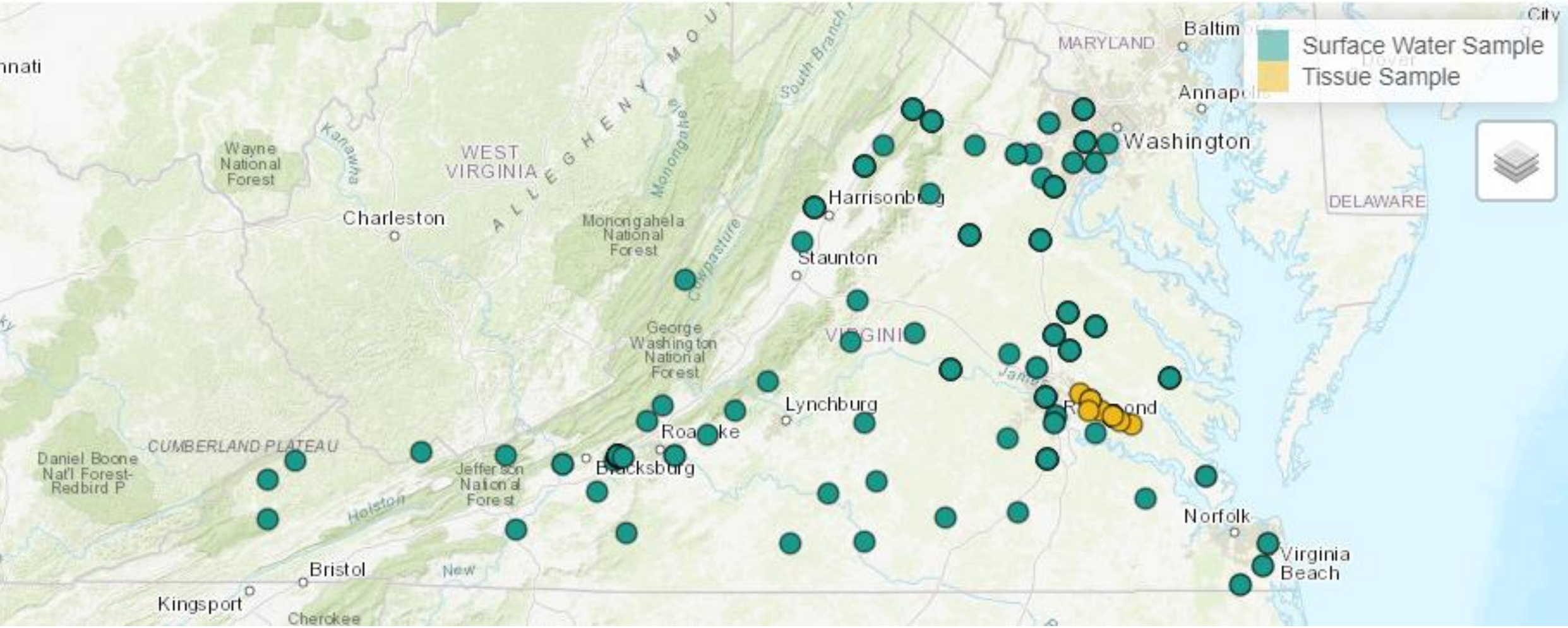


Six monitoring stations have multiple types of samples collected at the same site. Sites where sediment samples were also collected are **circled**. Sites where water samples were also collected are **boxed**.

PFAS monitoring - 2022

- Statewide water monitoring to inform occurrence and distribution of PFAS
 - Background concentrations
 - USGS Chesapeake Bay non-tidal stations
 - DEQ freshwater probabilistic stations
 - Concentrations in areas of concern
 - Follow-up from VDH sampling
 - Suspected or known sources of PCBs
 - Roanoke River GenX study
- Continued fish tissue sampling in the Middle Chickahominy River watershed

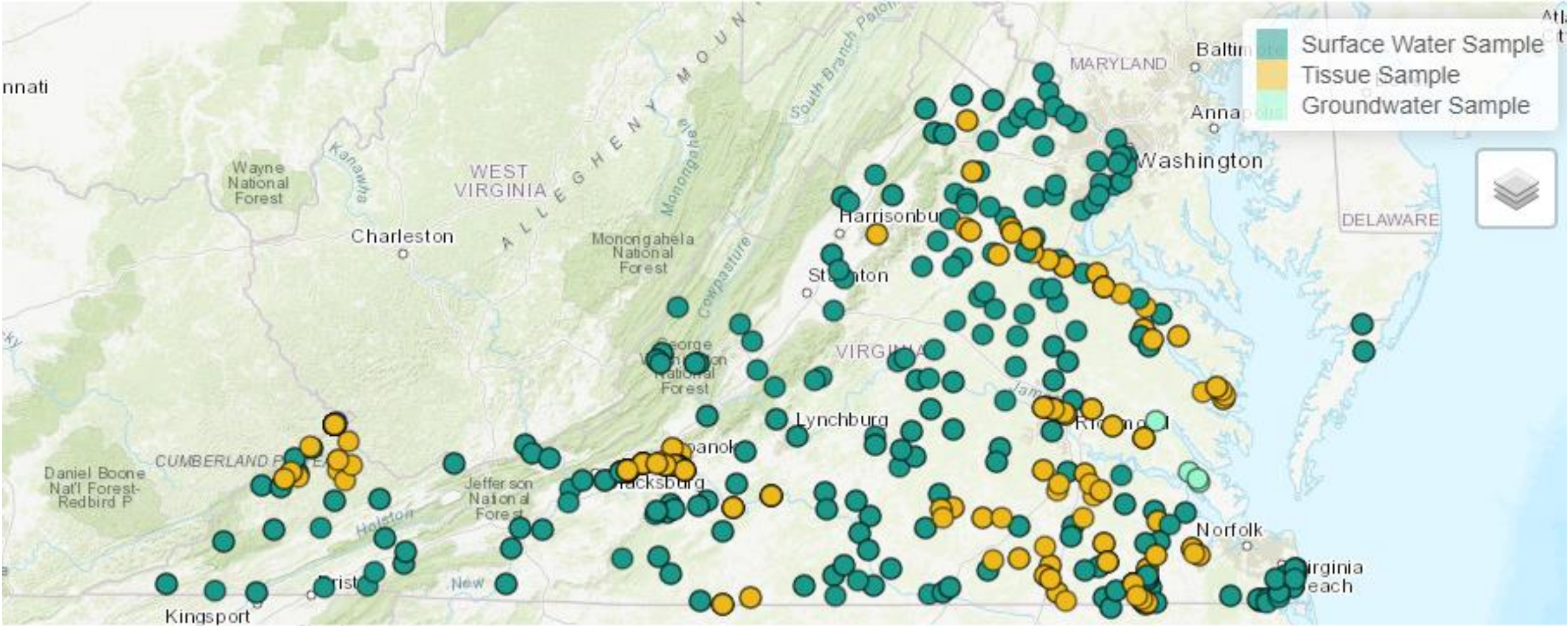
PFAS monitoring - 2022



PFAS monitoring - 2023

- General Assembly budgeted \$320,000 to monitor ambient surface waters and groundwater
 - Surface water monitoring at DEQ stations in all major river basins (243 stations)
 - Groundwater monitoring at 11 wells
- Added PFAS analyses to select DEQ fish tissue sites
 - Subset of routine fish tissue sites in the Rappahannock, Roanoke, Chowan, James, and Big Sandy River Basins
- Continued special monitoring studies in the Roanoke River and Middle Chickahominy River
- State Laboratory (Division of Consolidated Lab Services) provided PFAS analysis for water and tissue (previous years required commercial contractor)

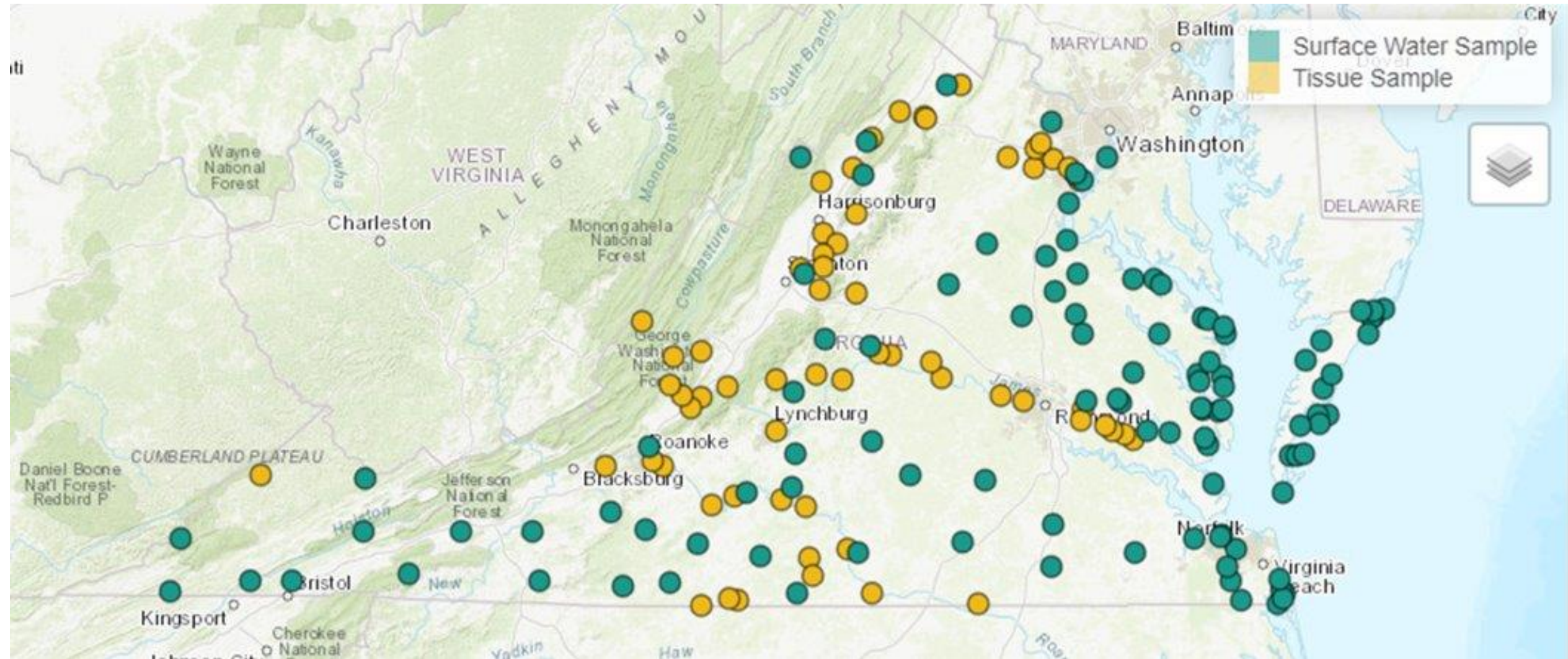
PFAS monitoring - 2023



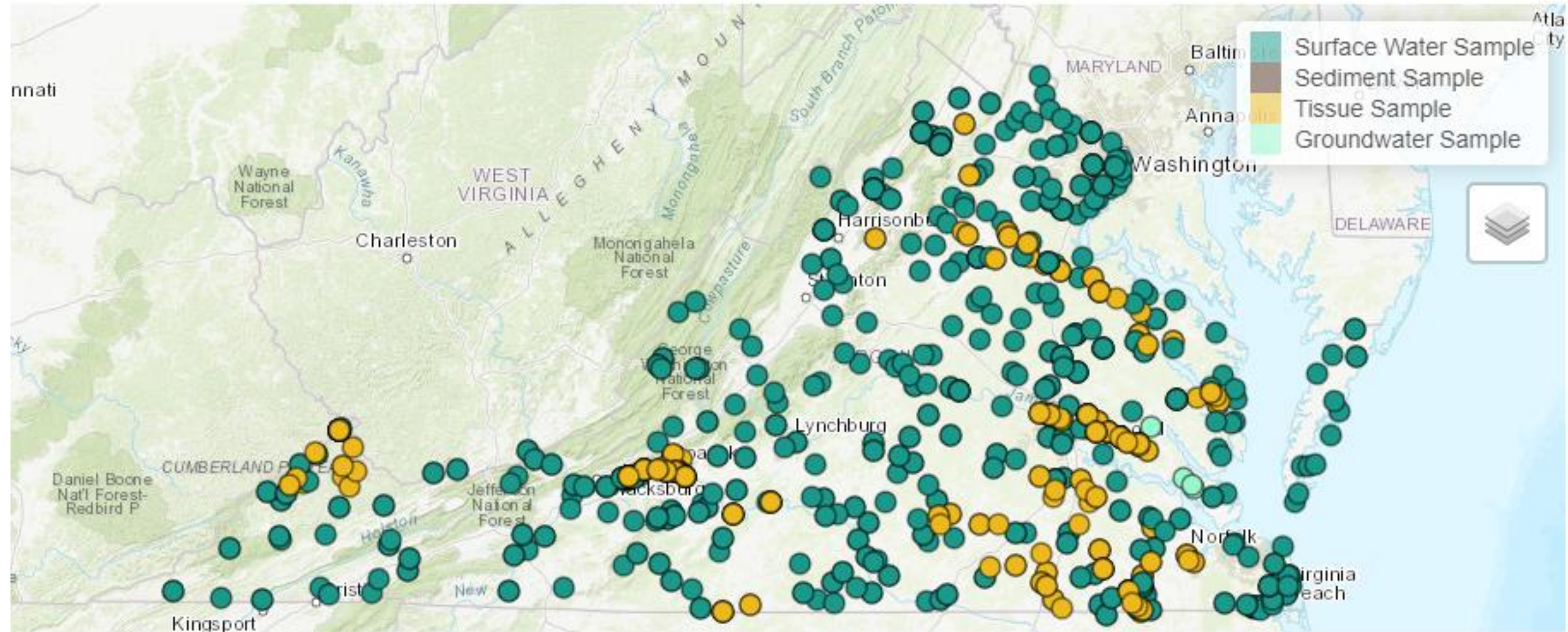
PFAS monitoring - 2024

- Statewide monitoring to further inform the occurrence and distribution of PFAS
 - Surface water samples from approximately 100 freshwater and estuarine probabilistic monitoring sites
 - Fish tissue sampling at sites primarily in the James, Potomac/Shenandoah, and Roanoke basins
- Special monitoring studies (fish tissue) in the Middle Chickahominy River and Occoquan River basins
- PFAS analysis in water and fish tissue provided by DCLS

PFAS monitoring - 2024



PFAS statewide monitoring summary: 2021-2024



2025 PFAS Planned Activities

- Continue fish tissue collections in basins which have not been sampled
- Surface water collections to support PFAS assessments consistent with recent legislation.



PFAS Legislation in Virginia

Brandon Bull, Director of Policy

Virginia Department of Environmental Quality

November 8, 2024

PFAS Legislative History Before 2024

- HB 2762 (Del. Bulova, 2019) – prohibited the use of class B firefighting foam that contains PFAS for testing or training purposes beginning July 1, 2021
- HB 586 (Del. Guzman, 2020) – directed VDH to establish a workgroup to look at certain PFAS substances in public drinking water
- HB 2189 (Del. Rasoul, 2023) – required publicly owned treatment works' pretreatment standards to require certain industrial users to test their wastestream for PFAS chemicals



2024 Legislation – HB 1085 (Del. Rasoul) and SB 243 (Sen. McPike)

- Requires VDH to transfer to DEQ monitoring results that indicate PFAS MCL exceedances
- DEQ is then required to develop and implement a plan to prioritize and conduct PFAS assessments to identify sources of PFAS in a public water system's raw water source

2024 Legislation – HB 1085 and SB 243



- Establishes PFAS self-reporting requirements for facilities that DEQ determines to be a potential source of PFAS in a public water system's raw water source
- Establishes requirements for PFAS monitoring for facilities deemed by DEQ to be a potential significant source of PFAS in a public water system's raw water source

2024 Legislation – HB 1085 and SB 243

- Establishes a PFAS Expert Advisory Committee to assist DEQ and VDH in identifying:
 - PFAS sources through PFAS assessments and associated monitoring and reporting
 - Public and private lab testing capacity issues
 - Options for reducing PFAS in surface waters causing PFAS MCL exceedances
- Reporting requirements

Budget Support for HB 1085 and SB 243

- The 2024-2026 Biennium Budget includes \$380,160 in each year for implementation of HB 1085 and SB 213
- This provides funding for three positions at DEQ



FOIA

- The PFAS Expert Advisory Committee is a public body subject to the Freedom of Information of Act. As such, all business of the group must be conducted in a public forum that has been duly noticed in accordance with the Act and minutes must be prepared.
- Emails may be considered the conduct of business, so individual members of the committee should not use "reply all" when receiving emails from DEQ, and any member of the committee that wants to provide information to the PEAC should send it to the staff contact (Max Wheeler) for distribution.
- As a public body, committee members should not discuss matters of the group outside of the meetings. This applies to conversations of more than two members as well as emails among more than two members.

Questions?

**For updates visit:
www.deq.virginia.gov/PFAS**



Break



Status of Implementing HB1085/SB243

Virginia Department of Environmental Quality

November 8, 2024

PFAS Activities Pursuant to HB1085/SB243

- July 1 VDH data transfer
- Staffing
- Committee membership and meetings
- Annual report
- October 1 VDH data transfer

July 1 VDH Data Transfer

- VDH collected data from 274 water works tested for PFAS from 2021 – 2023
 - 16 water works showed an MCL Exceedance
 - 2.5 million people served by those water works
- Voluntarily self-reported PFAS measurements from Fauquier, Loudoun, Orange, and Washington counties

July 1 VDH Data Transfer

- VDH collected data from 274 water works tested for PFAS from 2021 – 2023
 - 16 water works showed an MCL Exceedance
 - 2.5 million people served by those water works
- Voluntarily self-reported PFAS measurements from Fauquier, Loudoun, Orange, and Washington counties

Table 1 Summary of the data in the July 1 Data transfer, each record represents an individual measurement of a PFAS concentration

Source Water	Number of Records for Source Water Type (count)	Max of Hazard Index (unitless)	Max PFOS Concentration (ppt)	Max PFOA Concentration (ppt)	Max PFHxS Concentration (ppt)	Max PFNA Concentration (ppt)	Max HFPO-DA Concentration (ppt)	Max PFBS Concentration (ppt)
GU	4	1	33	56	9.5	5	0	26
GW	95	22	130	31	200	67	0	42
SW	14	6	7.1	5.5	6.8	0	57	5.6

Unique Systems with Exceedances: July 1

Table 2 Notifications of Unique Systems with Exceedances from VDH combined with data from VDH Water Works Owner Listing published 6/20/24, and DEQ Region

Water System	Name	City/County	Water Source	Service Connections	Population	Region
VA2161668	PINE HILL	ROANOKE COUNTY	GW	21	71	Blue Ridge
VA5019865	TWIN OAKS TRAILER PARK	BEDFORD COUNTY	GW	15	50	Blue Ridge
VA1155050	BELLAVISTA ESTATES	PULASKI COUNTY	GW	17	45	Blue Ridge
VA6059501	FAIRFAX COUNTY WATER AUTHORITY	FAIRFAX COUNTY	SW	281686	1121613	Northern
VA6107350	LOUDOUN WATER - CENTRAL SYSTEM	LOUDOUN COUNTY	SW	83426	334808	Northern
VA6179100	STAFFORD COUNTY UTILITIES	STAFFORD COUNTY	SW	40289	123684	Northern
VA6061318	NEW BALTIMORE REGIONAL	FAUQUIER COUNTY	GW	3201	8818	Northern
VA6107650	ROUND HILL, TOWN OF	LOUDOUN COUNTY	GW	1673	5019	Northern
VA6061595	VINT HILL	FAUQUIER COUNTY	GW	500	2449	Northern
VA6061200	MARSHALL WATERWORKS	FAUQUIER COUNTY	GW	640	1728	Northern
VA6061050	BETHEL ACADEMY SUBDIVISION	FAUQUIER COUNTY	GW	128	346	Northern
VA6107037	BEACON HILL-LCSA	LOUDOUN COUNTY	GW	95	333	Northern
VA6061665	WATERLOO ESTATES	FAUQUIER COUNTY	GW	79	213	Northern
VA6107070	CREIGHTON FARMS	LOUDOUN COUNTY	GW	27	95	Northern
VA6107075	HIWAY MHC LLC	LOUDOUN COUNTY	GW	51	80	Northern
VA6107010	ALDIE WATER COMPANY	LOUDOUN COUNTY	GW	39	70	Northern
VA6061125	DRYSDALE SUBDIVISION	FAUQUIER COUNTY	GW	25	63	Northern
VA6107420	ONE STOP TRAILER PARK	LOUDOUN COUNTY	GW	18	60	Northern
VA6061057	BOTHA SUBDIVISION	FAUQUIER COUNTY	GW	17	46	Northern
VA6047260	HAZEL RIVER	CULPEPER COUNTY	GW	12	28	Northern
VA6061129	BEALETON REGIONAL	FAUQUIER COUNTY	GU	1500	4250	Northern
VA6107150	HAMILTON, TOWN OF	LOUDOUN COUNTY	GW	718	2240	Northern
VA5117310	CLARKSVILLE, TOWN OF	MECKLENBURG COUNTY	SW	828	1400	Piedmont
VA1191883	WASHINGTON COUNTY SERVICE AUTHORITY	WASHINGTON COUNTY	SW	20866	47574	Southwest
VA3700500	NEWPORT NEWS, CITY OF	NEWPORT NEWS CITY	SW	69687	234220	Tidewater
VA3710100	NORFOLK, CITY OF	NORFOLK CITY	SW	139247	407300	Tidewater
VA2163560	MOUNTAIN VIEW ELEMENTARY SCHOOL	ROCKBRIDGE COUNTY	GW	1	250	Valley
VA2065540	PALMYRA	FLUVANNA COUNTY	GW	34	90	Valley

Surface Water Systems with MCL Exceedances: July 1

Table 3 Notifications of Unique Surface Water Systems with Exceedances from VDH combined with data from VDH Water Works Owner Listing published 6/20/24, and DEQ Region

Water System	Name	Intake	Water Treatment Plant	City/County	Water Source	Service Connections	Population	Region
VA3700500	NEWPORT NEWS, CITY OF		LEE HALL WTP + HARWOOD MILL	NEWPORT NEWS CITY	SW	139247	407300	Tidewater
VA3710100	NORFOLK, CITY OF	INLAND LAKES	MOORE'S BRIDGES WTP	NORFOLK CITY	SW	69687	234220	Tidewater
VA1191883	WASHINGTON COUNTY SERVICE AUTHORITY	MIDDLE FORK HOLSTON RIVER	MIDDLE FORK WATER TREATMENT PLANT	WASHINGTON COUNTY	SW	20866	47574	Southwest
VA5117310	CLARKSVILLE, TOWN OF	KERR RESERVOIR	CLARKSVILLE WATER TREATMENT PLANT	MECKLENBURG COUNTY	SW	828	1400	Piedmont
VA6059501	FAIRFAX COUNTY WATER AUTHORITY	OCCOQUAN RESERVIOR	GRIFFITH WTP	FAIRFAX COUNTY	SW	281686	1121613	Northern
VA6179100	STAFFORD COUNTY UTILITIES	SMITH LAKE	SMITH LAKE WTP	STAFFORD COUNTY	SW	40289	123684	Northern
VA2770900	WESTERN VIRGINIA WATER AUTHORITY	SPRING HOLLOW RESEVOIR	SPRING HOLLOW WTP	ROANOKE CITY	SW	67598	182700	Blue Ridge

Ground Water Systems with MCL Exceedances: July 1

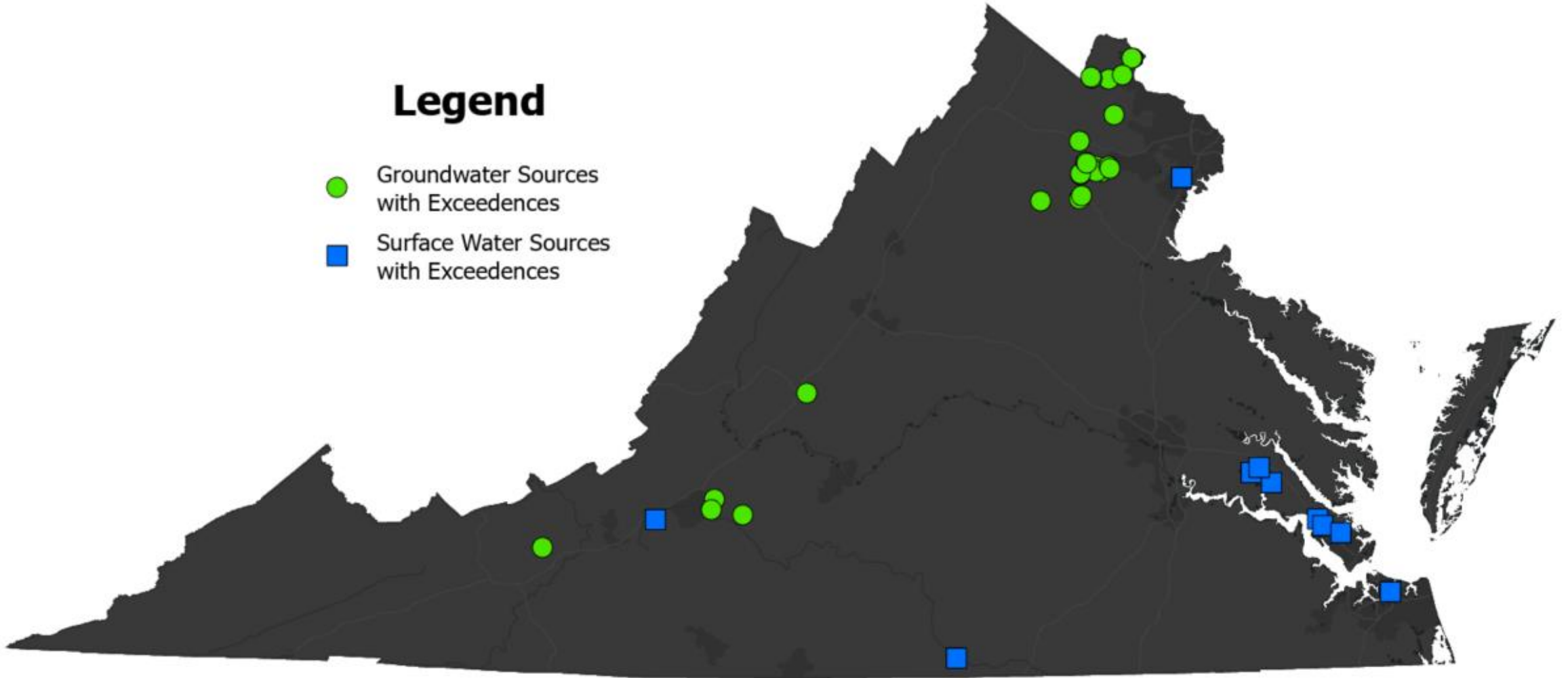
Table 4 Notifications of Unique Groundwater Systems with Exceedances from VDH combined with data from VDH Water Works Owner Listing published 6/20/24, and DEQ Region

Water System	Name	City/County	Water Source	Service Connections	Population	Region
VA6061129	BEALETON REGIONAL	FAUQUIER COUNTY	GU	1500	4250	Northern
VA2163560	MOUNTAIN VIEW ELEMENTARY SCHOOL	ROCKBRIDGE COUNTY	GW	1	250	Valley
VA2065540	PALMYRA	FLUVANNA COUNTY	GW	34	90	Valley
VA6061318	NEW BALTIMORE REGIONAL	FAUQUIER COUNTY	GW	3201	8818	Northern
VA6107650	ROUND HILL, TOWN OF	LOUDOUN COUNTY	GW	1673	5019	Northern
VA6061595	VINT HILL	FAUQUIER COUNTY	GW	500	2449	Northern
VA6061200	MARSHALL WATERWORKS	FAUQUIER COUNTY	GW	640	1728	Northern
VA6061050	BETHEL ACADEMY SUBDIVISION	FAUQUIER COUNTY	GW	128	346	Northern
VA6107037	BEACON HILL-LCSA	LOUDOUN COUNTY	GW	95	333	Northern
VA6061665	WATERLOO ESTATES	FAUQUIER COUNTY	GW	79	213	Northern
VA6107070	CREIGHTON FARMS	LOUDOUN COUNTY	GW	27	95	Northern
VA6107075	HIWAY MHC LLC	LOUDOUN COUNTY	GW	51	80	Northern
VA6107010	ALDIE WATER COMPANY	LOUDOUN COUNTY	GW	39	70	Northern
VA6061125	DRYSDALE SUBDIVISION	FAUQUIER COUNTY	GW	25	63	Northern
VA6107420	ONE STOP TRAILER PARK	LOUDOUN COUNTY	GW	18	60	Northern
VA6061057	BOTHA SUBDIVISION	FAUQUIER COUNTY	GW	17	46	Northern
VA6047260	HAZEL RIVER	CULPEPER COUNTY	GW	12	28	Northern
VA6107150	HAMILTON, TOWN OF	LOUDOUN COUNTY	GW	718	2240	Northern
VA2161668	PINE HILL	ROANOKE COUNTY	GW	21	71	Blue Ridge
VA5019865	TWIN OAKS TRAILER PARK	BEDFORD COUNTY	GW	15	50	Blue Ridge
VA1155050	BELLAVISTA ESTATES	PULASKI COUNTY	GW	17	45	Blue Ridge
VA2770900	WESTERN VIRGINIA WATER AUTHORITY	ROANOKE CITY	GW	67598	182700	Blue Ridge

July 1 VDH Data Transfer

Legend

- Groundwater Sources with Exceedences
- Surface Water Sources with Exceedences



PFAS Activities Pursuant to HB1085/SB243

- July 1 VDH Data Transfer
- Staffing
- Committee Membership and Meetings
- Annual report
- October 1 VDH Data Transfer

October 1 VDH Data Transfer

Table 5 Notifications of Exceedances from VDH combined with data from VDH Water Works Owner Listing published 6/20/24, Bold indicates a newly added drinking water source

PWSID	Name	Analyte	Result (ng/L)	City/County	Water Source	Service Connections	Population
VA6059501	FAIRFAX COUNTY WATER AUTHORITY	PFOA	5.1 (RAA)	FAIRFAX COUNTY	SW	281686	1121613
VA6061125	DRYSDALE SUBDIVISION	Perfluorooctanoic acid (PFOA)	5.3	FAUQUIER COUNTY	GW	25	63
VA6047260	HAZEL RIVER	Perfluorooctanesulfonic acid (PFOS)	6.3	CULPEPER COUNTY	GW	12	28
VA6047260	HAZEL RIVER	Perfluorooctanoic acid (PFOA)	5.2	CULPEPER COUNTY	GW	12	28
VA6047300	HERITAGE ESTATES	Perfluorooctanoic acid (PFOA)	4.9	CULPEPER COUNTY	GW	33	80
VA4145600	MILL QUARTER PLANTATION	Perfluorooctanoic acid (PFOA)	5	POWHATAN COUNTY	GW	114	273
VA6047340	MOUNTAIN VIEW TRAILER PARK	Perfluorooctanoic acid (PFOA)	6.3	CULPEPER COUNTY	GW	32	80
VA6047355	NORMAN ACRES SUBDIVISION	Perfluorohexanesulfonic acid (PFHxS)	14	CULPEPER COUNTY	GW	21	50
VA6047355	NORMAN ACRES SUBDIVISION	Perfluorooctanesulfonic acid (PFOS)	12	CULPEPER COUNTY	GW	21	50
VA2065540	PALMYRA	Perfluorooctanesulfonic acid (PFOS)	4.8	FLUVANNA COUNTY	GW	34	90
VA4085770	SPRING MEADOWS-MEADOW GATE	Perfluorooctanesulfonic acid (PFOS)	4.2	HANOVER COUNTY	GW	640	2362
VA2770900	WESTERN VIRGINIA WATER AUTHORITY MELISSA WELL TAP	Perfluorooctanesulfonic acid (PFOS)	4.1	ROANOKE CITY	GW	67598	182700
VA2770900	WESTERN VIRGINIA WATER AUTHORITY BUSH #1 WELL TAP	Perfluorooctanesulfonic acid (PFOS)	4.9	ROANOKE CITY	GW	67598	182700
VA2770900	WESTERN VIRGINIA WATER AUTHORITY CRAIG AVE WELL TAP	Perfluorooctanesulfonic acid (PFOS)	5.5	ROANOKE CITY	GW	67598	182700
VA2770900	WESTERN VIRGINIA WATER AUTHORITY North Lakes 6 Well Tap	Perfluorooctanesulfonic acid (PFOS)	6.3	ROANOKE CITY	GW	67598	182700
VA2770900	WESTERN VIRGINIA WATER AUTHORITY MUSE SPRING FIN TAP	Perfluorooctanesulfonic acid (PFOS)	4.7	ROANOKE CITY	GW	67598	182700
VA2003525	NORTH RIVANNA WTP	Perfluorooctanoic acid (PFOA)	25	ALBEMARLE COUNTY	SW	1	0
VA2003525	NORTH RIVANNA WTP	Perfluorooctanesulfonic acid (PFOS)	6.5	ALBEMARLE COUNTY	SW	1	0

DEQ's PFAS Actions Looking Forward

- December 1, 2024 – Initial notice of Self-Reporting/PFAS monitoring
- Early December 2024 – Second meeting of Expert Advisory Committee
- January 1, 2025 – Prioritization plan developed
- Spring 2025 – Third meeting of Expert Advisory Committee
- Summer 2025 – Fourth meeting of Expert Advisory Committee

Legislative Enactment – Initial Notifications

- Legislation Requires:

“That for public water systems for which the Department of Environmental Quality has received notice on or before September 1, 2024, of PFAS detected above the threshold established in subsection B of § 62.1-44.34:30 of the Code of Virginia, as created by this act, the Department shall issue notice to applicable facilities by December 1, 2024, of required self-reporting under § 62.1-44.34:31 of the Code of Virginia, as created by this act, and required monitoring under § 62.1-44.34:32 of the Code of Virginia, as created by this act.”

Notifications for Self-Reporting and PFAS Monitoring

§ 62.1-44.34:31. Self-reporting of PFAS manufacture and use for PFAS assessment.

If deemed by DEQ to be a potential source of PFAS in the public water system's raw water source, facilities are to:

- Self-report for facilities that manufacture and/or use PFAS
 - Facilities to report within 90 days after notification from DEQ
 - For facilities that discharge directly to surface waters under a VPDES permit
 - For indirect discharges to POTWs under an industrial pretreatment program
 - DEQ to provide a form for reporting
 - DEQ to provide self-reporting information to POTWs within 30 days of receipt

Notifications for Self-Reporting and PFAS Monitoring

§ 62.1-44.34:32. Monitoring of PFAS sources for PFAS assessments.

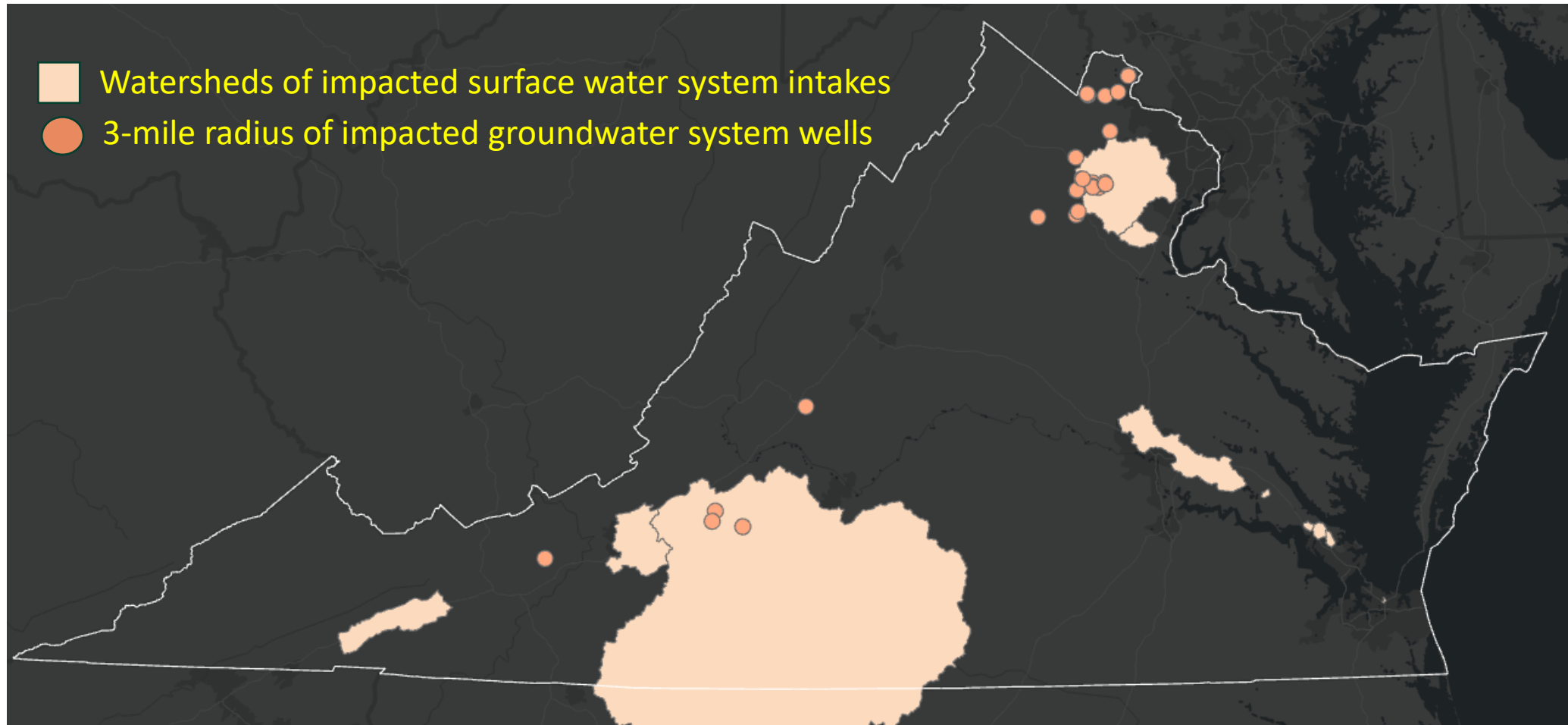
If deemed by DEQ to be a potentially significant source of PFAS in the public water system's raw water source, facilities are to:

- Conduct PFAS Monitoring
 - Conduct and report the results of quarterly discharge monitoring for one year
 - After three months advance notice
 - Promptly report results to the DEQ
 - Testing to be performed using EPA Method 1633, or other approved EPA method that may be allowed by the Department
 - DEQ may allow discontinuation of monitoring after the first two quarters with proper monitoring results that are below method detection level

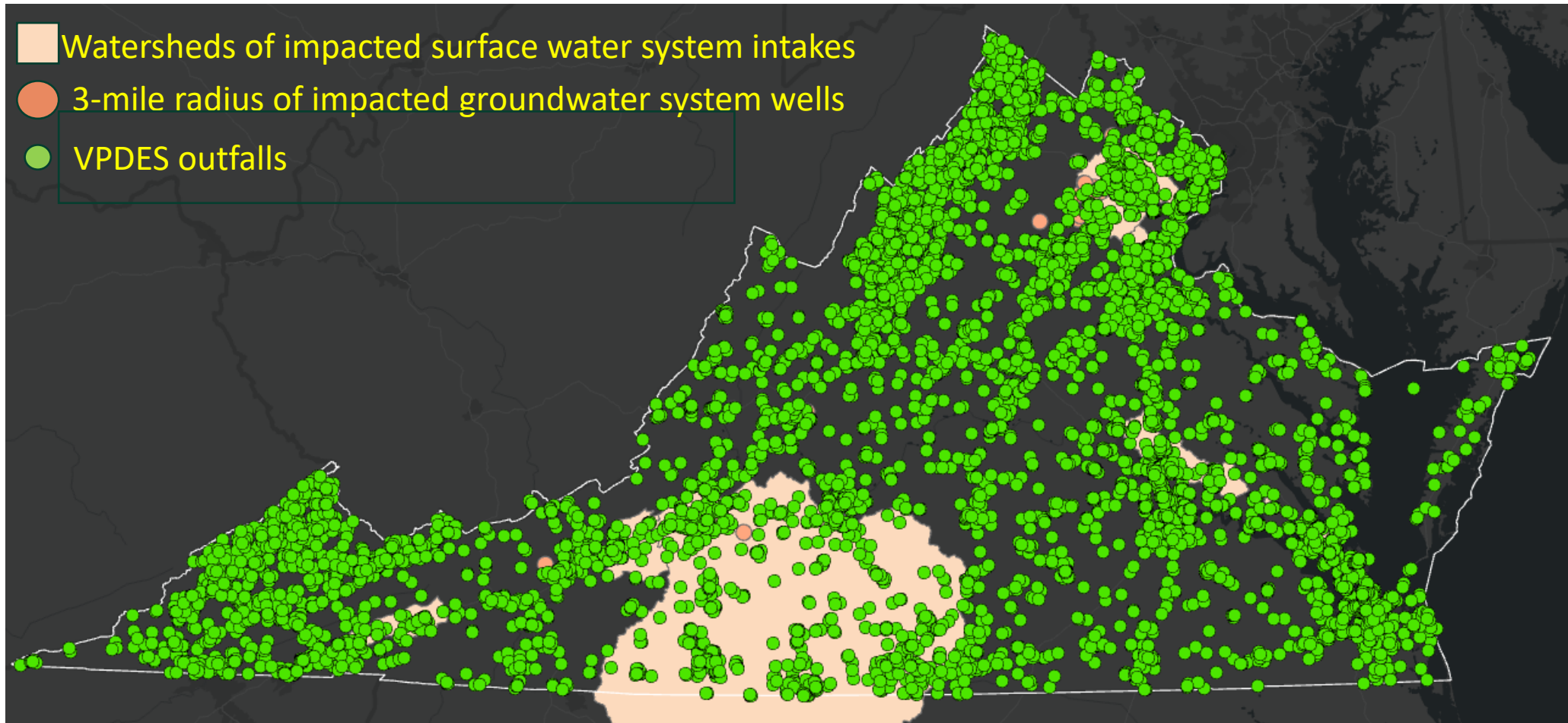
Notifications for Self-Reporting and PFAS Monitoring

- The next several slides walk through the process for identifying facilities for self-reporting and PFAS monitoring
- DEQ will share the list of facilities to receive notification at the next meeting of the PFAS Expert Advisory Committee in December

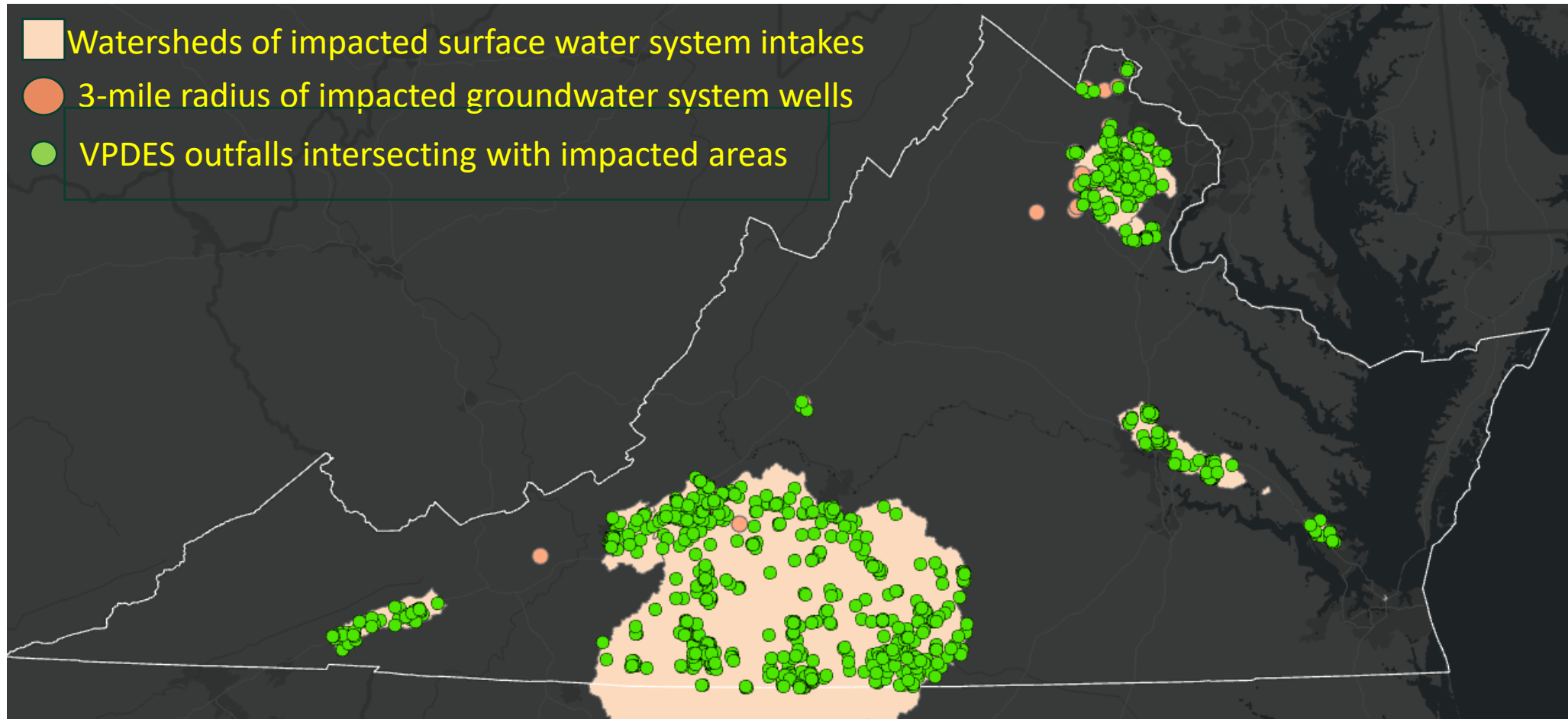
Process for Selecting VPDES Permittees for Notification



Process for Selecting VPDES Permittees for Notification

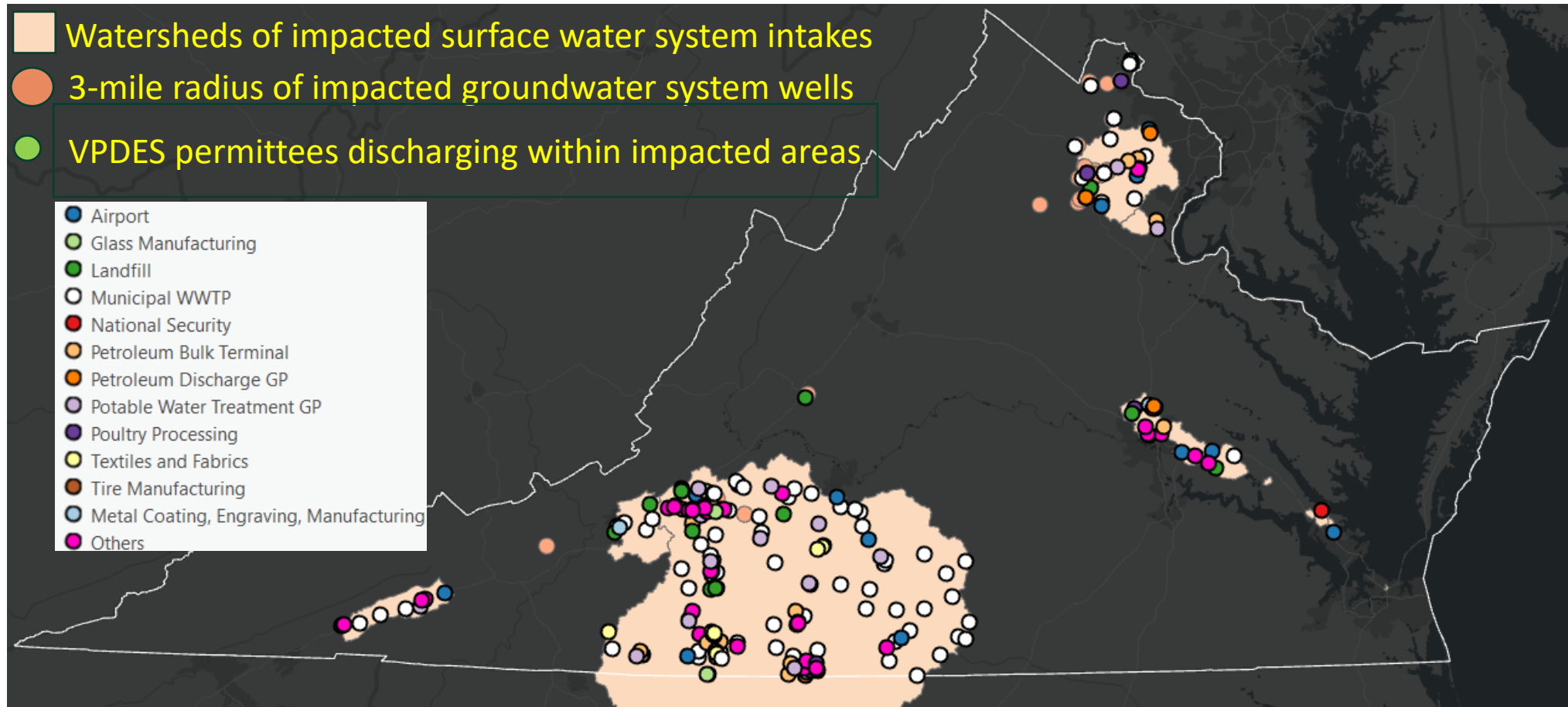


Process for Selecting VPDES Permittees for Notification



Process for Selecting VPDES Permittees for Notification

Final list includes all municipal WWTPs, potable water GPs, and petroleum discharge GPs. It also includes stormwater industrial GPs and industrial IPs that fall into EPA's PFAS-handling industry sector list.



Process for Selecting VPDES SIUs for Notification

- A list of significant industrial users (SIUs) that discharge to WWTPs discharging within the targeted areas was compiled.
- This list was then narrowed down to the SIUs associated with SIC or NAICS codes on EPA's PFAS-handling industry sector list.
 - ❖ Electroplating, Plating, Polishing, Anodizing, and Coloring
 - ❖ Textile and/or Fabric Mills
 - ❖ Plastics or Resin Manufacturing
 - ❖ Solid Waste Landfill
 - ❖ Basic chemical production
 - ❖ Others

Process for Identifying Other Facilities for Notification

- The legislation directs DEQ to require for self monitoring in:
"Any airport, air base, air station, fire training facility, landfill, or other facility or site that the Department has a reasonable basis to believe has significant soil or groundwater PFAS contamination significantly impacting finished water levels."
- DEQ has gathered GIS layers for
 - Airports
 - Landfills (Solid Waste Permits)
 - Formerly Used Defense Sites
 - Military Bases
 - Super Fund and non National Priority List Sites
- No layer for fire training facility exists so DEQ performed a Google Maps search for "Virginia Fire academy training" to produce a layer.
- Currently assessing the sites in zones of influence for drinking water systems with MCL exceedances for overlap with VPDES permits.



Framework for Prioritization Planning

Virginia Department of Environmental Quality

November 8, 2024

Framework for Prioritization Planning

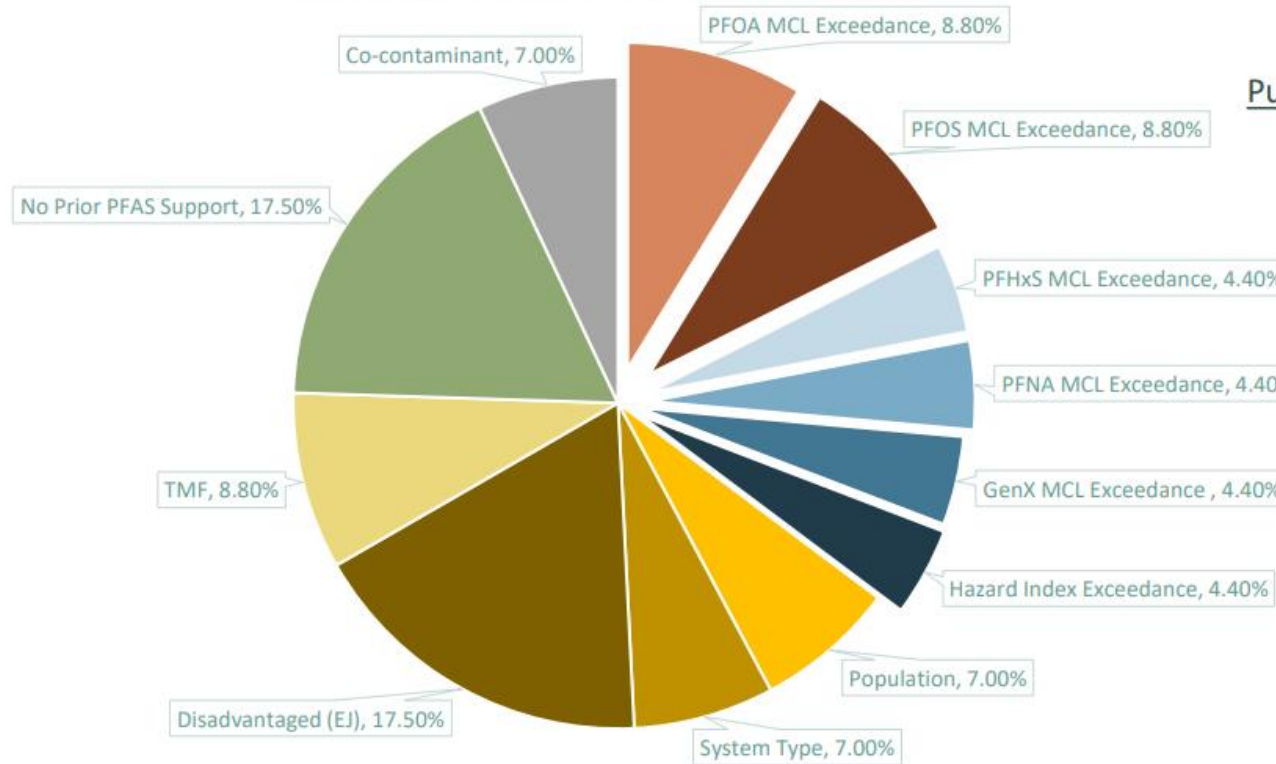
- “... the Department shall develop and implement a plan to prioritize and conduct PFAS assessments for identifying significant sources of PFAS in such public water system's raw water source or sources. Such prioritization plan shall be developed within six months of the initial notification by VDH pursuant to subsection A and updated annually thereafter.”
- In developing its prioritization for conducting PFAS assessments, the Department shall consider
 - i. Data and other information available from VDH regarding public water supplies, including but not limited to applicable PFAS data;
 - ii. Any data or other information submitted directly to the Department by public water systems on a voluntary basis;
 - iii. Information from consultation with VDH and public water systems with finished water monitoring results above any PFAS MCL; and
 - iv. Other data or information the Department considers useful for setting priorities, including studies published in the scientific literature.

Arizona's Scheme for Grant Funding (Small Drinking Water Systems)

PFAS Solutions: Prioritization of PWSs



Maximum Prioritization Score Breakdown



Public health impacts

- 4x above MCL/Hazard Index (HI)
- above MCL/HI
- at least 50% of MCL/HI

Data sources: ADEQ PFAS sampling project and UCMR5

Neighboring State's Factors

- North Carolina– PFAS Drinking Water System Testing and future actions (PFAS Action Strategy 2022)
 - Number of people impacted
 - Concentration of PFAS in drinking water
 - Vulnerable populations and disadvantaged communities
- Maryland Land Restoration Program Source Identification Framework (PFAS Action Plan 2023)
 - Severity of PFAS Concentrations
 - Size and EJScreen Score
 - Availability of alternative water supply
 - Guidance from and collaboration with Water and Science Administration

Factors to Consider When Prioritizing Discussion

- Public Health Impacts
- Drinking Water Supply Characteristics
 - Customers
 - Water System
 - Environment

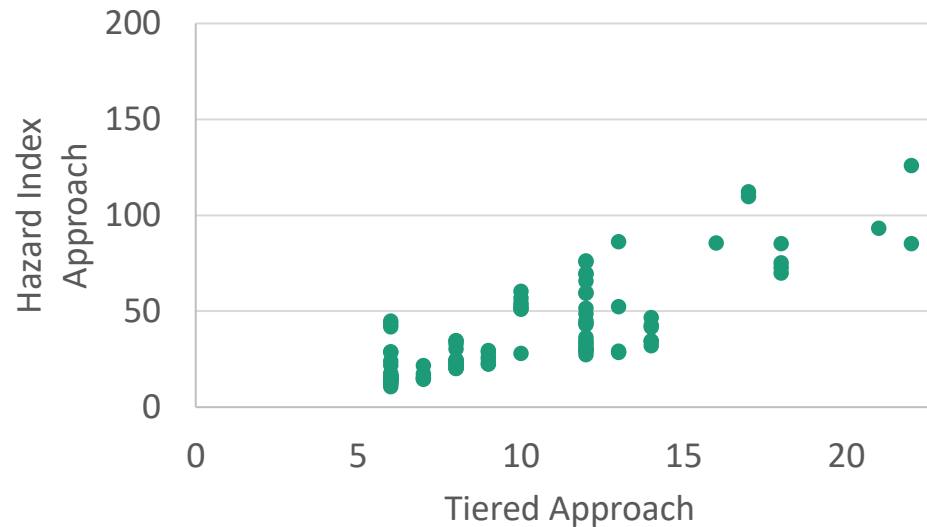
Public Health Impacts

- Tiered Approach

- Score of 5 for $\geq 4X$ MCL
- Score of 3 for 1 - 4 X MCL
- Score of 1 for 0.5 - 1X MCL
- Score of 0 for <0.5 MCL
- Multiple of 2 for PFOA and PFOS

- Hazard Index Approach

- $$\sum \frac{C_{PFAS}}{MCL_{PFAS}} * 10$$

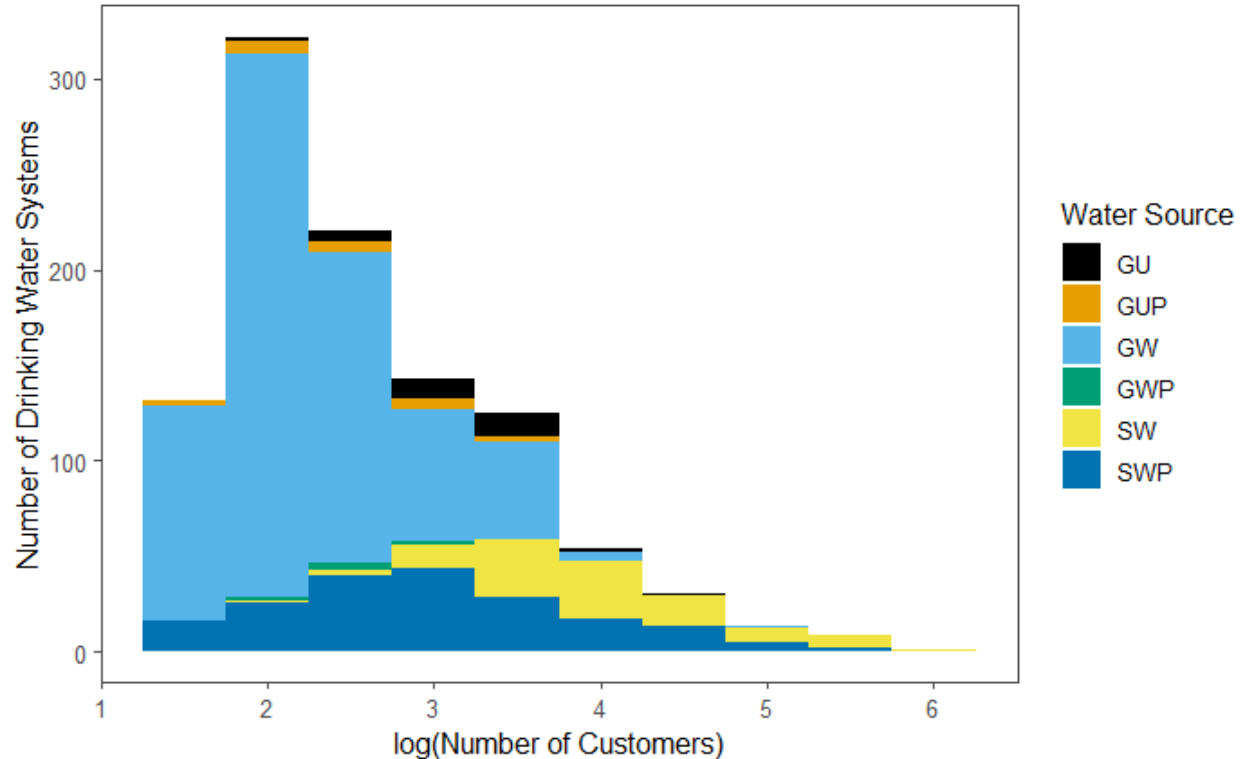


Public Health Impacts

- How to account for time?
 - Code of Virginia: “For every public water system for which ... PFAS in finished water has been detected above any PFAS MCL”
 - EPA Drinking Water Regulation: PFAS MCL violations ... are based on a running annual average...
 - Groundwater systems with > 10,000 customers and Surface Water systems - 4 samples/year
 - Groundwater systems < 10,000 customers - 2 samples/year

Drinking Water Supply Characteristics: Customers

- Population
 - VDH has used
 - Large System >50,000 customers
 - Medium System between 50,000 and 1,000 customers
 - Small System <1000 customers
 - Do we weight larger or smaller systems greater?



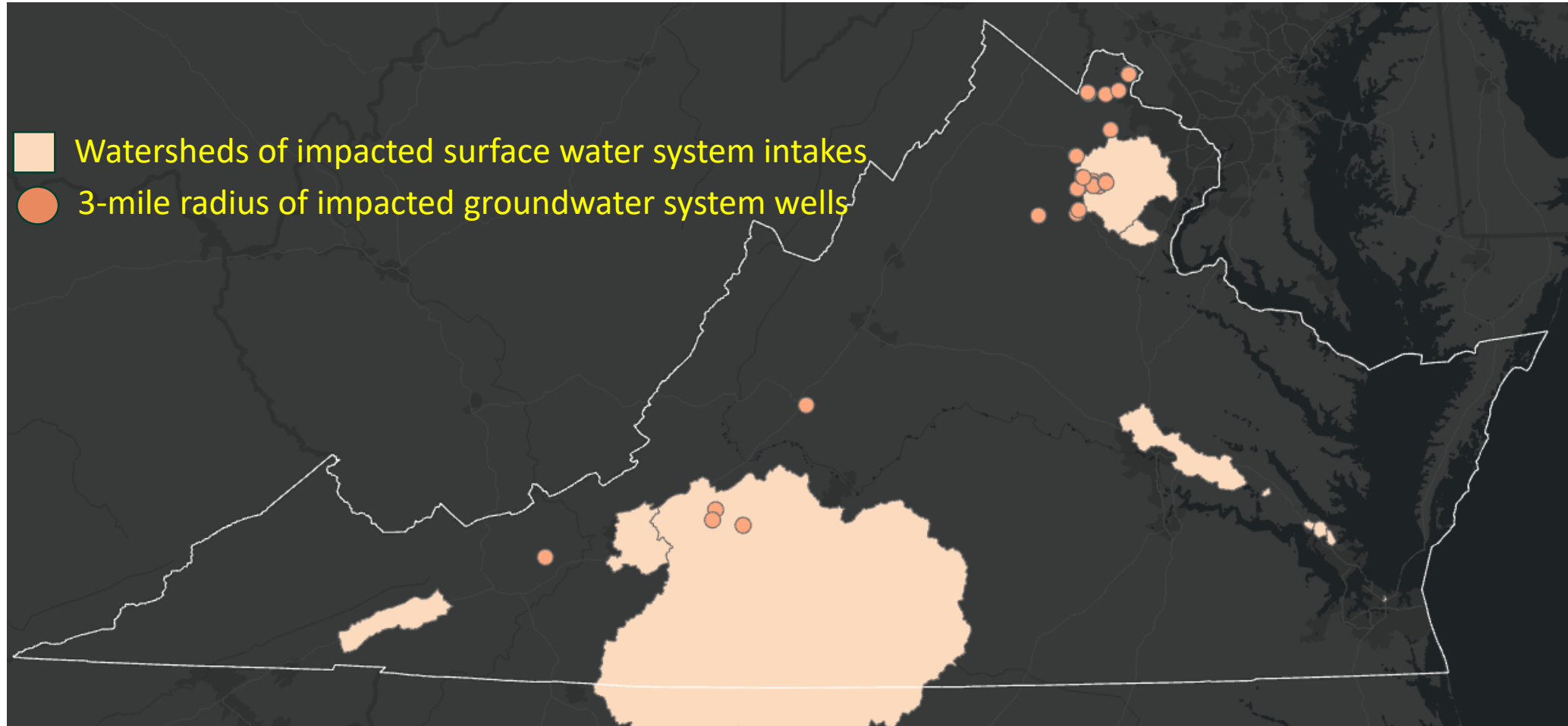
Drinking Water Supply Characteristics: Customers

- Environmental Justice
 - Climate Justice Screening Tool
 - Aggregates by census tract
 - Offers a binary on if disadvantaged
 - Meets one “burden threshold AND associated socioeconomic threshold”
 - EJScreen
 - Arbitrary search area
 - Offers information but does not interpret it
 - VA EJScreen+
 - Virginia specific tool produced by Virginia Environmental Justice Collaborative
 - Data aggregated by Census Tract
- Will need data for service areas

Drinking Water Supply Characteristics: Water System

- System engagement
 - Provides additional data
 - Requests help? Rebuffs help?
- Other regional systems affected
 - Upstream/downstream systems?
 - Sells water to other systems

Other Regional Systems Affected



Drinking Water Supply Characteristics: Water System

- System engagement
 - Provides additional data
 - Requests help? Rebuffs help?
- Other regional systems affected
 - Upstream/downstream systems?
 - Sells water to other systems

Drinking Water Supply Characteristics: Environment

- Water source
 - Groundwater vs surface water
- Size of watershed
- Number of potential significant sources
- Reservoirs



Public Input

Virginia Department of Environmental Quality

November 8, 2024



Meeting Wrap Up

Virginia Department of Environmental Quality

November 8, 2024