VA PFAS Sampling Training Webinar

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Virginia Department of Health
April 14 2021

Office of Drinking Water
Safe Drinking Water for a Healthy Virginia

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

Overview & Ground Rules

Introductions– Please use chat window (Name, Organization)

Courtesy: When you are not speaking to the group, please MUTE your microphone

Technical Issues – Christina Latino (Christina.latino@vdh.virginia.gov)

VDH-ODW PFAS Webpage: www.vdh.virginia.gov/drinking-water/pfas/

Agenda –

- Background & Scope of the Work
- PFAS Sampling Video
- PFAS Sampling Do's & Don'ts
- PFAs Post Sampling – What to Expect
- Q / A Session

HB586

Patron: Delegate Guzman (GA 2020)

- The State Health Commissioner to convene a PFAS workgroup,
- Conduct a detailed investigation on current literature and what other states are doing,
- Conduct PFAS occurrence study at no more than 50 waterworks and source waters,
- May develop MCL guidelines
- **Timeline**: December 01, 2021

Potential Issues: No state funding

HB1257

Patron: Delegate Rasoul (GA 2020)

- Establish MCLs for PFOA, PFOS, and other PFAS compounds, 1,4-Dioxane, and Chromium (VI)
- Provide status report by 11/01/2020
- Provide detailed report by 10/01/2021
- Effective Date: 01/01/2022

Potential Issues:

- No comprehensive PFAS,1,4-dioxane, or Cr(VI) occurrence data in VA
- No funding

Newport News
Where Great Things Are Happening

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AQUA SM
An Essential Utilities Company

THE CITY OF NORFOLK

MISSION H2O Virginia

WESTERN VIRGINIA WATER AUTHORITY
540.853.5700 | info@westernvawater.org

Chesapeake VIRGINIA

VWEA EST 1947
Virginia Water Environment Association

James River ASSOCIATION

American Chemistry Council

Fairfax Water

POTOMAC RIVERKEEPER NETWORK

American Water Works Association
VirginiaSection

HALIFAX COUNTY Virginia

VIRGINIA LEAGUE OF CONSERVATION VOTERS

VIRGINIA AMERICAN WATER

New River HEALTH DISTRICT

LOUDOUN WATER

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

VCASA

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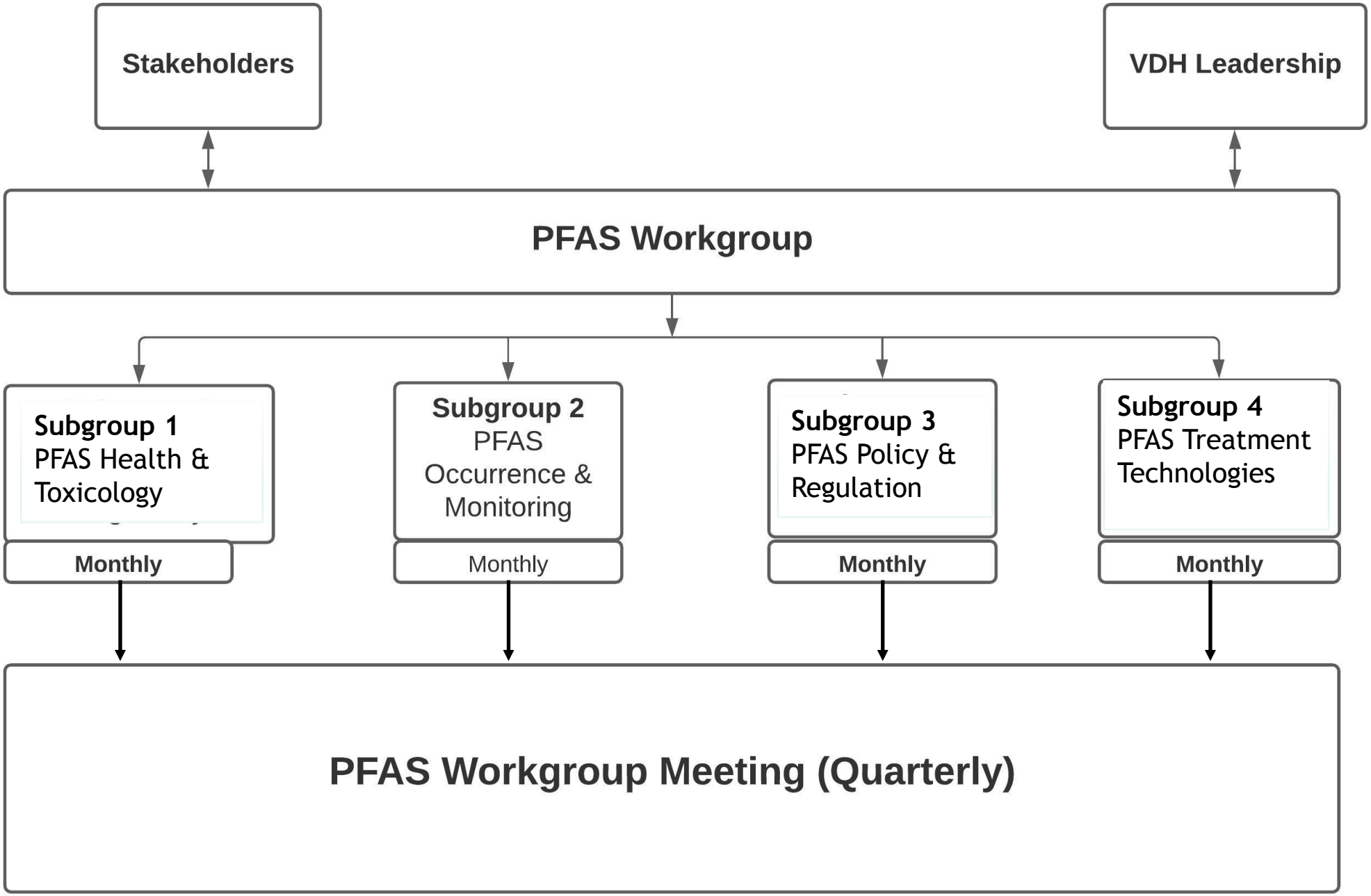

PFAS in VA Drinking Water

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Proposed - Workgroup Logistics

Data sharing – MS Teams/SharePoint Site

Meeting information on Town Hall (www.townhall.virginia.gov).

PFAS Webpage: www.vdh.virginia.gov/drinking-water/pfas/

Tech and Admin support – Office of Drinking Water (ODW) staff

Meeting Information –

Meeting #	When (Tentative)	Where
1	October 2020	Virtual
2	January 2021	Virtual
3	March 2021 (Interim)	Virtual
4	April 2021	Virtual
5	July 2021	Northern Virginia
6 (If needed)	October 2021	Southwest Virginia

VA PFAS Sampling/Monitoring Study

Approaches based on:

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

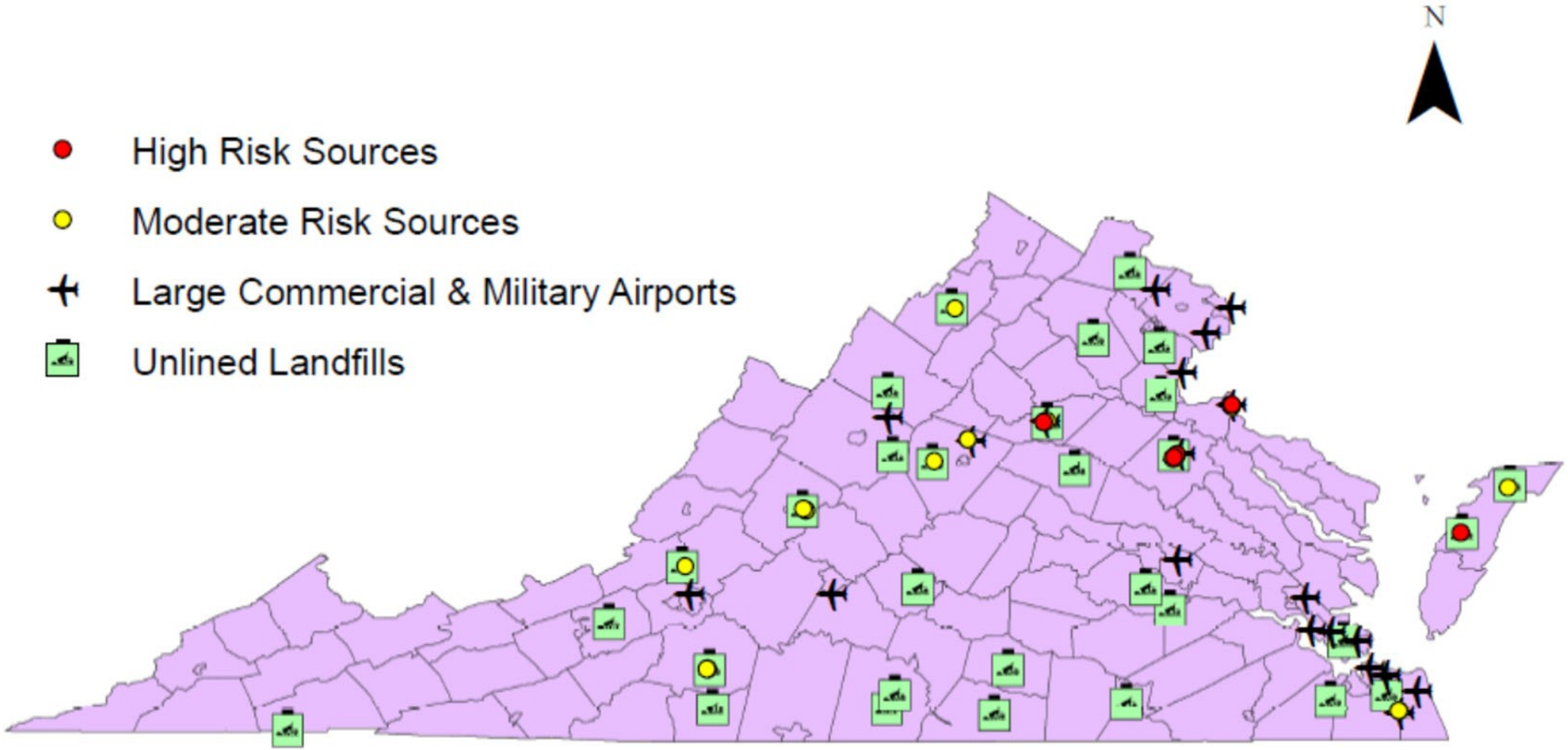
Proposed strategy (depends on budget):

1. **Hybrid approach (17 large + select potential high risk waterworks + select source waters)**

PWSID	PWS name	City / County	Population	# EPs	#CCs
6059501	FAIRFAX COUNTY WATER AUTHORITY	FAIRFAX COUNTY	1074422	2	1
3810900	VIRGINIA BEACH, CITY OF	**VIRGINIA BEACH**	**446067**	**0**	**1**
3700500	NEWPORT NEWS, CITY OF	NEWPORT NEWS	407300	2	0
4041845	CHESTERFIELD CO CENTRAL WATER SYSTEM	CHESTERFIELD	320658	1	2
4087125	HENRICO COUNTY WATER SYSTEM	HENRICO	292000	1	1
6107350	LOUDOUN WATER - CENTRAL SYSTEM	LOUDOUN	286202	1	1
3710100	NORFOLK, CITY OF	NORFOLK	234220	2	0
6013010	ARLINGTON COUNTY	ARLINGTON	215000	0	1
4760100	RICHMOND, CITY OF	RICHMOND CITY	197000	1	0
3550051	CITY OF CHESAPEAKE - NORTHWEST RIVER SYS	CHESAPEAKE	166704	2	0
2770900	WESTERN VIRGINIA WATER AUTHORITY	ROANOKE CITY	155000	2	0
6153600	PWCSA - EAST	PRINCE WILLIAM	153000	0	1
6510010	ALEXANDRIA, CITY OF	ALEXANDRIA	146970	0	2
6153251	PWCSA - WEST	PRINCE WILLIAM	130001	0	2
3740600	PORTSMOUTH, CITY OF	PORTSMOUTH	120400	1	0
6179100	STAFFORD COUNTY UTILITIES	STAFFORD	112285	2	0
6177300	SPOTSYLVANIA COUNTY UTILITIES	SPOTSYLVANIA	84390	2	0
Totals				19	12
Total EP + CC = **31**					

17 Large Waterworks

Groundwater Systems



Potential High Risk: <½ mile of large airport or unlined landfill

Potential Moderate Risk: <1 mile of large airport or unlined landfill

6 – Potential High risk wells --→ 5 Systems

13 – Potential Moderate risk wells. --→ 11 Systems

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System Name	PWSID	Facility Name	ID	System Type	Population Served
NAVAL SUPPORT FACILITY_ DAHLGREN	6099340	WELL 3 - BLDG 274A (RESERVOIR WELL)	WL003	C	11000
NAVAL SUPPORT FACILITY_ DAHLGREN	6099340	WELL 1 - BLDG 1288 (BRONSON WELL)	WL001	C	11000
BOWLING GREEN_ TOWN OF	6033550	WELL 4	WL004	C	1152
PUNGOTEAGUE ELEMENTARY SCHOOL	3001790	WELL	WL001	NTNC	610
RSA ROUTE 20	6137120	WELL #2 (MAY LANE)	WL002	C	6 387
FT A P HILL - HEADQUARTERS	6033251	WELL HQ #2 (PWAT 28)	WL028	C	180
NAVAL SUPPORT FACILITY_ DAHLGREN	6099340	WELL 2 - BLDG 1190 (CASKEY WELL)	WL002	C	11000
BOWLING GREEN_ TOWN OF	6033550	WELL 5	WL005	C	1152
BOWLING GREEN_ TOWN OF	6033550	WELL 1A	WL01A	C	1152
LONG HOLLOW	2163400	LHWDC WELL 1	WL001	C	578
LONG HOLLOW	2163400	LHWDC WELL 2	WL002	C	578
EARLYSVILLE FOREST	2003255	WELL 6	WL006	C	488
EARLYSVILLE FOREST	2003255	WELL 5	WL005	C	488
PEACOCK HILL SUBDIVISION	2003650	WELL 8	WL008	C	475
RSA ROUTE 20	6137120	WELL #1 (PORTER RD)	WL001	C	387
MOUNTAIN VIEW ELEM SCHOOL	2163560	MTN VIEW WELL	WL001	NTNC	250
ROANOKE CEMENT COMPANY	2023180	WELL - ROANOKE CEMENT COMPANY	WL001	NTNC	190
FT A P HILL - HEADQUARTERS	6033251	WELL HQ #1 (PWAT 29)	WL029	C	180
FRANKLIN COUNTY COMMERCE CENTER	5067137	WELL NO. 5	WL005	NTNC	103

Groundwater Systems

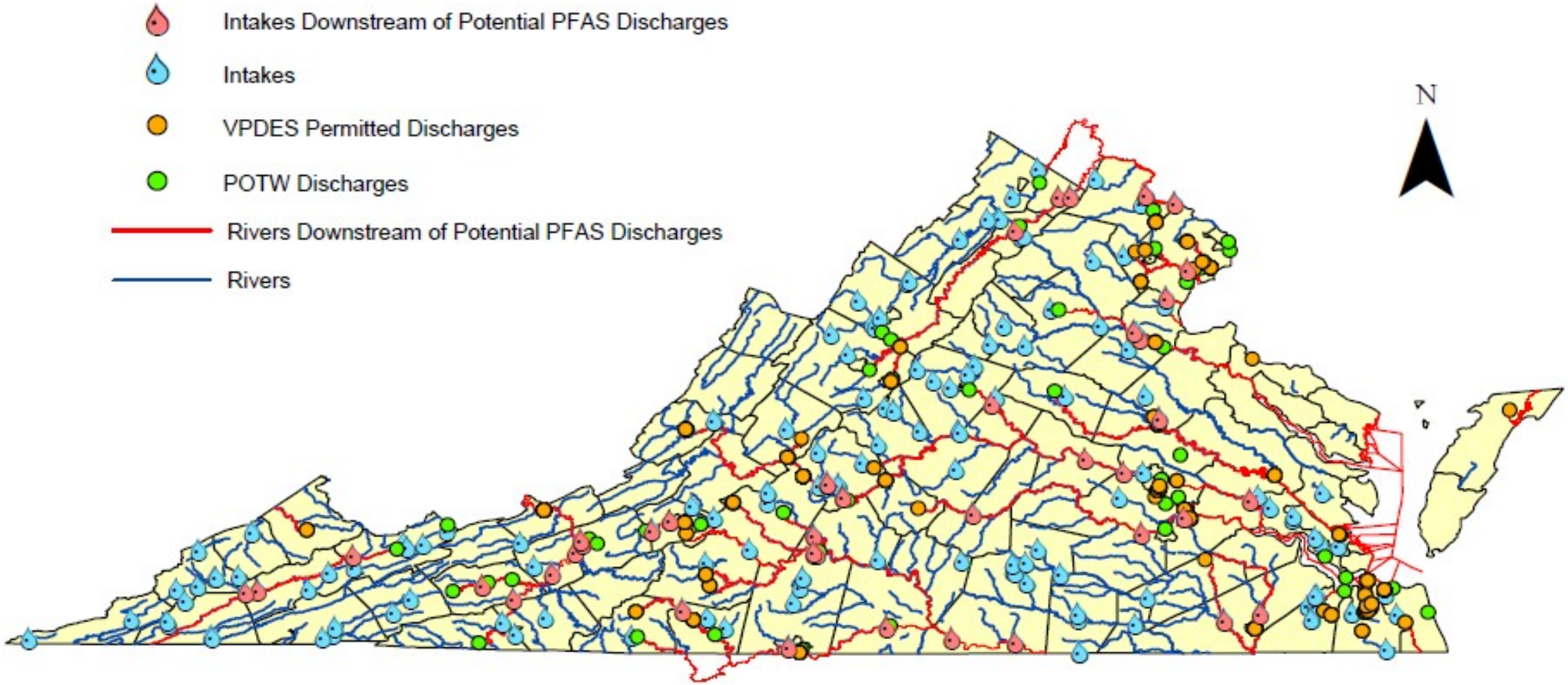
Major Water Sources

VDH-DEQ lists of potential sources of PFAS:

- VPDES discharge permits (Potential **direct dischargers**)
- POTWs with **Significant Industrial Users**
- Based on **Standard Industrial Classification** (SIC) Codes for
  - Significant Industrial Users
  - Direct Dischargers
  - Potential use and/or discharge PFAS

Approach: Use these to identify major water sources potentially impacted by PFAS

Major Water Sources



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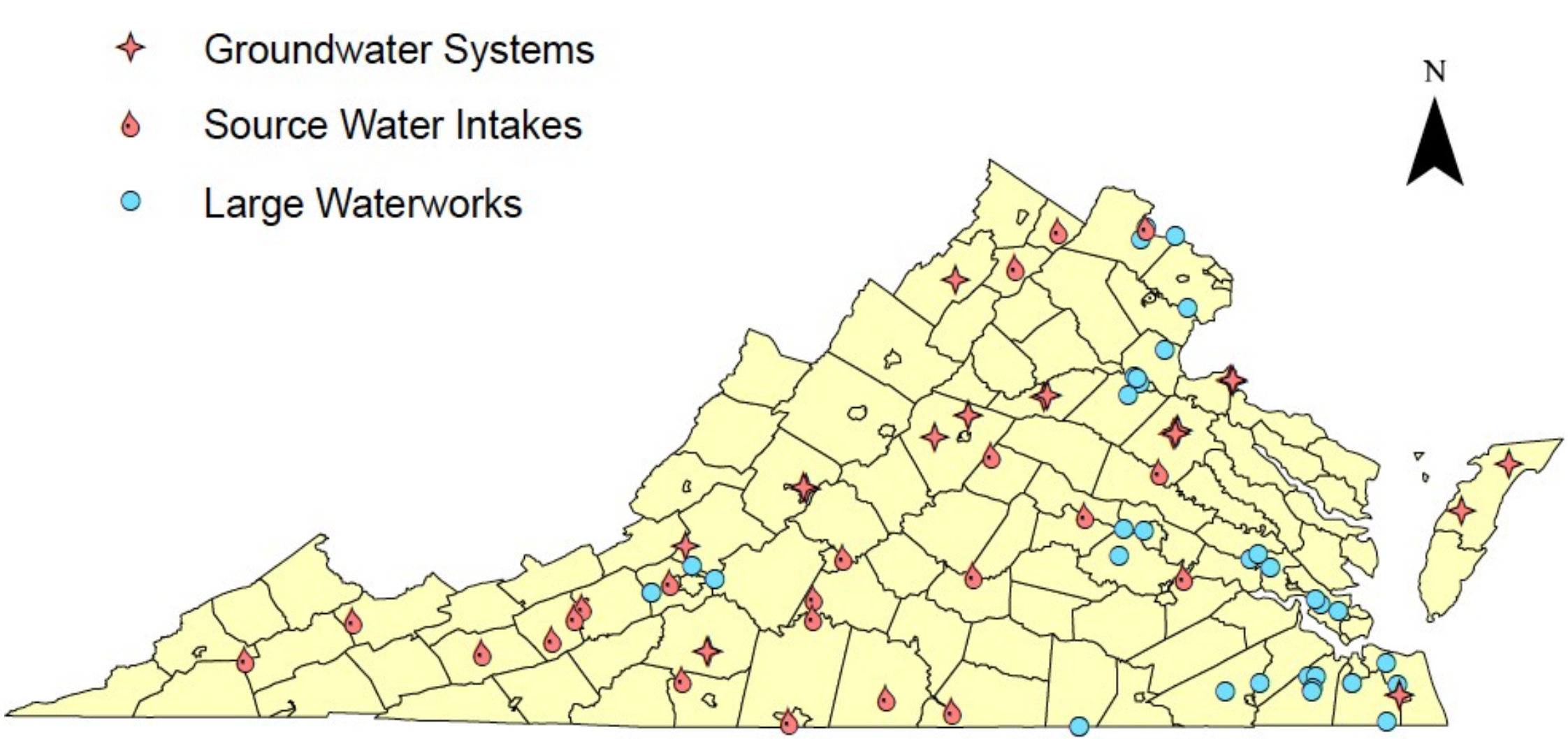
Major Water Sources - Approach

- Traced potentially impacted drinking water intakes **(45 intakes)**
- Excluded intakes from 17 large systems - covered by entry point sampling
- Sorted the remaining list (largest to smallest population served)
- Select one intake for each PWS
  - Yielded 29 intakes; Proposal is to select 22 from this list
    - Preference based on vulnerable age groups; population served etc.
  - DEQ and ODW input may adjust priority from this list

PWSID	System	Facility
5680200	LYNCHBURG, CITY OF	JAMES RIVER-ABERT
4085398	HANOVER SUBURBAN WATER SYSTEM	NORTH ANNA RWI
6107300	LEESBURG_ TOWN OF	POTOMAC INTAKE
5590100	DANVILLE, CITY OF	DAN RIVER INTAKE
5089852	UPPER SMITH RIVER WATER SUPPLY	SMITH RIVER INTAKE
3670800	VIRGINIA-AMERICAN WATER CO.	APPOMATTOX RIVER
2775300	CITY OF SALEM WTP	ROANOKE RIVER
5031150	CAMPBELL COUNTY CENTRAL SYSTEM	BIG OTTER RIVER
6153675	QUANTICO MARINE BASE-MAINSIDE	BRECKINRIDGE RESERVOIR
1750100	RADFORD_ CITY OF	INTAKE ON NEW RIVER
2187406	FRONT ROYAL_ TOWN OF	SOUTH FORK SHENANDOAH RIVER
2065480	LAKE MONTICELLO	RIVANNA RIVER
1195900	WISE COUNTY REGIONAL WATER SYSTEM	CLINCH RIVER INTAKE
1155641	PULASKI COUNTY PSA	CLAYTOR LAKE
5780600	HCSA- LEIGH STREET PLANT	RAW WATER INTAKE
5147170	FARMVILLE_ TOWN OF	APPOMATTOX RIVER
1197810	WYTHEVILLE_ TOWN OF	REED CREEK
4075735	JAMES RIVER CORRECTIONAL CTR	JAMES RIVER INTAKE
1185695	RICHLANDS_ TOWN OF	IN001 - CLINCH RIVER INTAKE
2043125	BERRYVILLE_ TOWN OF	SHENANDOAH RIVER
5031050	ALTAVISTA, TOWN OF	STAUNTON RIVER
1121643	RADFORD ARMY AMMUNITION PLANT	NEW RIVER
5117310	CLARKSVILLE_ TOWN OF	KERR RESERVOIR INTAKE
1195700	ST PAUL_ TOWN OF	CLINCH RIVER
5117707	ROANOKE RIVER SERVICE AUTHORITY	LAKE GASTON INTAKE
2043634	MOUNT WEATHER EMERGENCY OPERATIONS CENTE	SHENANDOAH RIVER
1121057	NRV REGIONAL WATER AUTHORITY	NEW RIVER (RAW WATER) PUMP STATION
1197435	NEW RIVER REGIONAL WATER AUTHORITY	INTAKE - NEW RIVER
4041035	APPOMATTOX RIVER WATER AUTHORITY	LAKE CHESDIN RAW WATER INTAKE

Major Water Sources

Proposed PFAS Sampling Sites



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Hybrid Approach Summary

	# Samples	# Systems	Population
17 Large Waterworks	31	17	4,541,619
GW – Potential High Risk	6		13,329
GW – Potential Medium Risk	13	11	2,124
Major Water Sources	22	22	
Total	72	50	4,557,072

PFAS Sampling Logistics

- US EPA Method 533 will be utilized for the finished water sample analysis; DoD method will be used for surface water samples (source water intakes).
- PFAS Samples will be collected by the waterworks staff at the entry point to the distribution.
- PFAS analysis is FREE to the waterworks (paid by VDH –ODW).
- PFAS Sampling kits with prepaid shipping labels and instructions will be provided to the 50 selected sites
- VDH and the lab will provide technical assistance during and post sampling period

VA PFAS Sampling Video is available under “VA PFAS Sampling” tab at

https://www.vdh.virginia.gov/drinking-water/pfas/

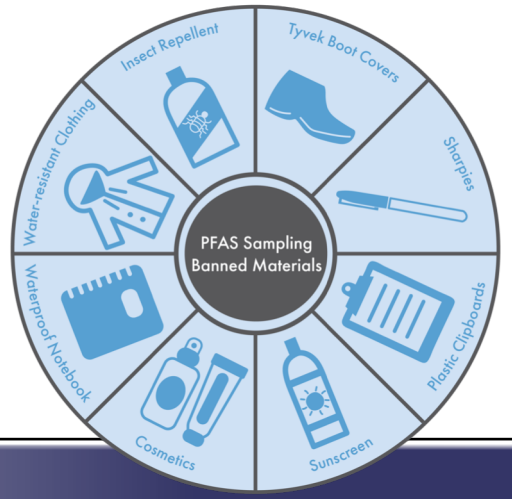
Recap - PFAS Sampling Do’s & Don'ts

Dan Horne, PE

Engineering Field Director
Southeast Virginia Field Office
VDH Office of Drinking Water

PFAS Sampling - Clothing

Do	Don't
Wear well-laundered (at least 6 times) PFAS-free clothing – cotton preferred – PVC or polyurethane boots The clothes should not have been washed with a fabric softener In case of inclement weather, wear polyurethane, vinyl, or rubber-coated gear	Don’t wear rain-, stain-, or flame-resistant clothing (Scotch-gard, Gore-tex, coated Tyvek, etc.) or footwear. In case of inclement weather, no water-proof or rain-resistant coatings on gear (except as noted to the left)



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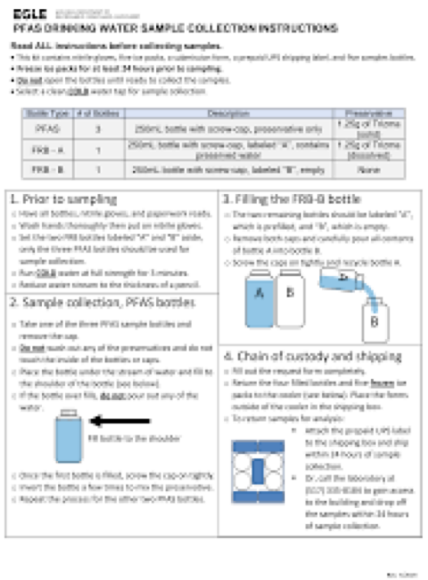
PFAS Sampling - Skin Care products

Do	Don't
There are some PFAS-free sunscreens, insect repellants available – check with maker, several lists of acceptable materials are available	Wear cosmetics, hand creams, moisturizers until after sampling has been completed

Preparing before the Sampling - Paperwork

Do

Bottles should be pre-labeled before arriving at the site – use ball-point pens and metal clipboards – regular loose paper



EGLE

PFAS DRINKING WATER SAMPLE COLLECTION INSTRUCTIONS

Read ALL instructions before collecting samples.

- This kit contains nitrile gloves, five ice packs, a submission form, a prepaid UPS shipping label, and five sample bottles.
- Freeze ice packs for at least 24 hours prior to sampling.
- Do not open the bottles until ready to collect the samples.
- Select a clean (COLD water tap for sample collection.

Bottle Type	# of Bottles	Description	Preservative
PFAS	3	250mL bottle with screw-cap, preservative only	1.25g of Trizma (solid)
FRB – A	1	250mL bottle with screw-cap, labeled "A", contains preserved water	1.25g of Trizma (dissolved)
FRB – B	1	250mL bottle with screw-cap, labeled "B", empty	None

1. Prior to sampling
   - Have all bottles, nitrile gloves, and paperwork ready.
   - Wash hands thoroughly then put on nitrile gloves.
   - Set the two FRB bottles labeled "A" and "B" aside; only the three PFAS bottles should be used for sample collection.
   - Run (COLD water at full strength for 3 minutes.
   - Reduce water stream to the thickness of a pencil.

2. Sample collection, PFAS bottles
   - Take one of the three PFAS sample bottles and remove the cap.
   - Do not touch nor any of the preservatives and do not touch the inside of the bottles or caps.
   - Place the bottle under the stream of water and fill to the shoulder of the bottle (see below).
   - If the bottle over fills, do not pour out any of the water.

Fill bottle to the shoulder

   - Once the first bottle is filled, screw the cap on tightly.
   - Invert the bottle a few times to mix the preservative.
   - Repeat the process for the other two PFAS bottles.

3. Filling the FRB-B bottle
   - The two remaining bottles should be labeled "A", which is prefilled, and "B", which is empty.
   - Remove both caps and carefully pour all contents of bottle A into bottle B.
   - Screw the caps on tightly and relabel bottle A.

4. Chain of custody and shipping
   - Fill out the request form completely.
   - Return the four filled bottles and five frozen ice packs to the cooler (see below). Place the bottles outside of the cooler in the shipping box.
   - To return samples for analysis:
     - Attach the prepaid UPS label to the shipping box and ship within 24 hours of sample collection.
     - Or, call the laboratory at (517) 335-8184 to gain access to the building and drop off the samples within 24 hours of sample collection.

Don't

Don’t use Sharpies or similar permanent markers (Magic Marker, Marks-a-lot, etc.) – no waterproof field books, logbooks, plastic clipboards, water-resistant paper or labels – no self-adhesive papers (Post-It Notes, etc.)

https://www.michigan.gov/documents/egle/EGLE-RRD-LSS-PFASsamplinginstructions_670407_7.pdf

PFAS Sampling - At the Site

Do	Don't
Wash your hands, put on powder-free nitrile gloves – change gloves and re-wash hands if you move to another location or site Make sure the water source has been running long enough to ensure the samples will be representative of the source (preferably at least one hour)	No food or drink at the site – many food wrappers contain PFAS

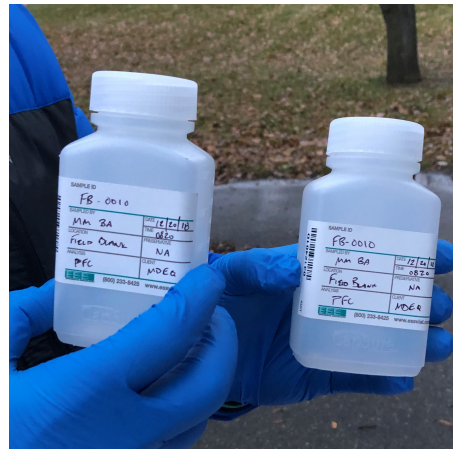
PFAS Sampling - At the Sampling Tap

Do	Don't
Let the tap flow for at least five minutes before sampling If possible, sample directly from a metal tap	Don’t sample from Teflon (PFTE) or low-density polyethylene (LDPE) tubing

https://www.michigan.gov/pfasresponse/0,9038,7-365-88059_91297---,00.html

PFAS Sampling Procedure

Do	Don't
Open one bottle at a time – hold the cap in one hand, by fingers only (not next to palm) – use other hand to collect sample – place cap back on bottle, tighten and invert 5 times – then move to next bottle	Don’t open more than one sample bottle at a time – don’t put the cap down anywhere



https://www.michigan.gov/pfasresponse/0,9038,7-365-88059_91297---,00.html

PFAS Sample Preservation

Do	Don't
Use preservative already in bottles Use regular ice	Don’t rinse bottles as part of sampling Don’t use “Blue Ice” or other chemical ice packs

Post Sampling – What to Expect?

Bob Edelman, PE

Robert.edelman@vdh.virginia.gov

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Have any Question, Comment or Suggestion, contact Us

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