PFAS Policy and Regulations Subgroup

Draft Meeting Minutes

11:00 am to 12:00 pm, April 19, 2021

Hosted by the Virginia Department of Health Office of Drinking Water

1. Welcome and meeting overview: ODW Policy Director, Nelson Daniel called the meeting to order 11:00 a.m. The meeting was conducted by electronic communication means (WebEx) due to the ongoing public health emergency and recorded. Nelson used a presentation for the meeting. It follows the Minutes and will be posted on Town Hall.
    a. Subgroup members (members present indicated by "y")
        i. Phillip Musegaas (Potomac Riverkeeper Network) y
        ii. Paul Nyffeler (Chem Law) n
        iii. Jamie Hedges (Fairfax Water) y
        iv. Jillian Terhune (City of Norfolk) y
        v. Wendy Eikenberry (Augusta County Service Authority) y
        vi. John Aulbach (Aqua Virginia) n
        vii. Russ Navratil (VA AWWA) y
        viii. Jessica Edwards-Brandt (Loudoun Water) y
        ix. Mike McEvoy (Western Virginia Water Authority) y
        x. Andrea Wortzel (Mission H20) y
        xi. Steve Risotto (ACC) n
        xii. Nelson Daniel (VDH Office of Drinking Water) y
    b. Guests
        i. Amanda Waters – AquaLaw
        ii. Ellen Egan – AquaLaw
        iii. John DeRosa – Prince William County Service Authority
        iv. Roddy Mowe – Loudoun Water
        v. Mishelle Noble-Blair – Upper Occoquan Service Authority
        vi. Brian Owsenek – Upper Occoquan Service Authority
    c. ODW Staff
        i. Robert Edelman
        ii. Christine Latino

2. Minutes from the March 15, 2021 meeting – Subgroup members reviewed the minutes prior to the meeting and did not have any changes; Nelson will post as "final."

3. Member updates on state/federal development of maximum contaminant limits (MCLs) or other limits on per- and polyfluoroalkyl substances (PFAS)
    a. **Michigan:**
        i. Michigan recently issued a press release about compliance – it includes a summary of the state's first round of sampling; most utilities are in

compliance, some lag in getting data from smaller community and nontransient noncommunity waterworks.

ii. Michigan has a $500 million grant program to help utilities with compliance issues (PFAS + other issues); compliance is based on running average, similar to the disinfection byproducts rule (as opposed to basing compliance on individual test results).

iii. https://www.michigan.gov/pfasresponse/0,9038,7-365-86513_96296-557120--,00.html

b. **Minnesota:**

i. Minnesota has published its "Minnesota's PFAS Blueprint" - a broad program to address PFAS, including risk assessment for water, air emissions, landfills, etc.; designate all PFAS as hazardous; require companies to disclose use of PFAS; focus on remediation at landfills, etc.

ii. https://www.pca.state.mn.us/sites/default/files/p-gen1-22.pdf

4. Review and Releasing Sample Results
   a. Slides 11 and 12 contain items Subgroup members consider important to convey to consumers about PFAS
   b. Other recommendations include:
      i. The U.S. Environmental Protection Agency (EPA) has not established a national standard beyond the health advisory level for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).
      ii. Note that Virginia is following a process to: assess PFAS in drinking water at selected locations; and inform rulemaking by the Board of Health (provide a summary in messaging). EPA is also undertaking rulemaking which follows the process set out in the Safe Drinking Water Act (regulatory determination) (The March 15, 2021 meeting materials include a summary of EPA's rulemaking process)
   c. Draft information sheet for Virginia consumers (Slide 13)
      i. Subgroup members suggested looking at information other states have developed for consumers, including Colorado
      ii. https://cdphe.colorado.gov/pfcs/water
      iii. https://drive.google.com/file/d/1WSGGcjTVAmAvEIb1cMbhJNEQviL4yWGU/view
   d. Slide 14 contains items Subgroup members consider important to convey to waterworks about PFAS and the sampling study (Slide 14). ODW plans to develop different fact sheets/information for different groups – waterworks' consumers, waterworks, and the general public – as part of a communication toolkit.
   e. Robert Edelman (ODW, PFAS Occurrence and Monitoring Subgroup leader) provided an overview of the sampling process and ODW's procedure to receive and review results to ensure data quality and validity (Slides 15 through 28)

5. Public comment – none

6. Subgroup members asked for an opportunity to review and comment on the fact sheets and other information VDH is developing for consumers, waterworks, and the general public about the PFAS sampling study and understanding the results when they are available. Nelson agreed to send drafts to Subgroup members for review and comment. He noted that the information is in draft form and not ready for distribution. Nelson asked Subgroup members to review the fact sheets and return them with comments prior to the upcoming PFAS Workgroup meeting on April 29.

7. Nelson concluded the meeting at 12:15 and stopped the recording.

Next meeting: May 17, 2021, 11:00 am;

The next PFAS Workgroup meeting is on Thursday, April 29, 2021 at 1 pm.

PFAS Policy and Regulations Subgroup

Draft Meeting Agenda

By WebEx

11:00 am to 12:00 pm, March 15, 2021

Hosted by the

Virginia Department of Health Office of Drinking Water

1. Welcome and meeting overview
2. Minutes from the February 22, 2021 meeting (Town Hall)
3. Member updates on state/federal development of MCLs or other limits on PFAS (as needed)
4. EPA process to develop an MCL
5. Discussion about additional research needs
    a. Priorities for information from other subgroups
    b. Information from other states
6. Review and releasing sampling results
7. Public comment

Next meeting: April 19, 2021, 11:00 am

PFAS Policy and Regulations Subgroup

Nelson Daniel

Virginia Department of Health

April 19, 2021

PFAS Policy Subgroup Meeting Overview

Update Member Reports on Research

- EPA, CA, CO, CT, MD, NY, MA, MI, MN, NH, NJ, NC, VT, Other States

Review and releasing sampling results

- Information for waterworks re PFAS
- Information for consumers re PFAS
- Other considerations/concerns

Data Handling

Public comments

Deliverables for the next meeting

Meeting Minutes

Minutes are published on:

- Virginia Town Hall
- https://townhall.virginia.gov/ search for **PFAS**

Members receive email with minutes

Minutes saved on the PFAS Workgroup SharePoint

- PFAS Policy… Subgroup > Meetings

Need to approve meeting minutes of:

- March 15, 2021

Subgroup Members

- Phillip Musegaas (Potomac Riverkeeper Network) y
- Paul Nyffeler (Chem Law)
- Jamie Hedges (Fairfax Water) y
- Jillian Terhune (City of Norfolk) y
- Wendy Eikenberry (Augusta County Service Authority) y
- John Aulbach (Aqua Virginia)
- Russ Navratil (VA AWWA) y
- Jessica Edwards (Loudoun Water) y
- Mike McEvoy (Western Virginia Water Authority) y
- Andrea Wortzel (Mission H20) y
- Steve Risotto (ACC)
- Nelson Daniel (VDH Office of Drinking Water) y

Virginia PFAS Workgroup - Objectives

Determine the occurrence of PFAS in drinking water throughout the Commonwealth,

Identify possible sources of PFAS contamination, and

Evaluate existing approaches to regulating PFAS, including regulatory approaches adopted by other states and the federal government.

Six specific PFAS, including:

- Perfluorooctanoic acid (PFOA)
- Perfluorooctane sulfonate (PFOS)
- Perfluorobutyrate (PFBA) [aka Pentafluorobutanoic acid???]
- Perfluoroheptanoic acid (PFHpA)
- Perfluorohexane sulfonate (PFHxS) [Perfluorohexane sulfonic acid]
- Perfluorononanoic acid (PFNA)

Other PFAS “as deemed necessary”

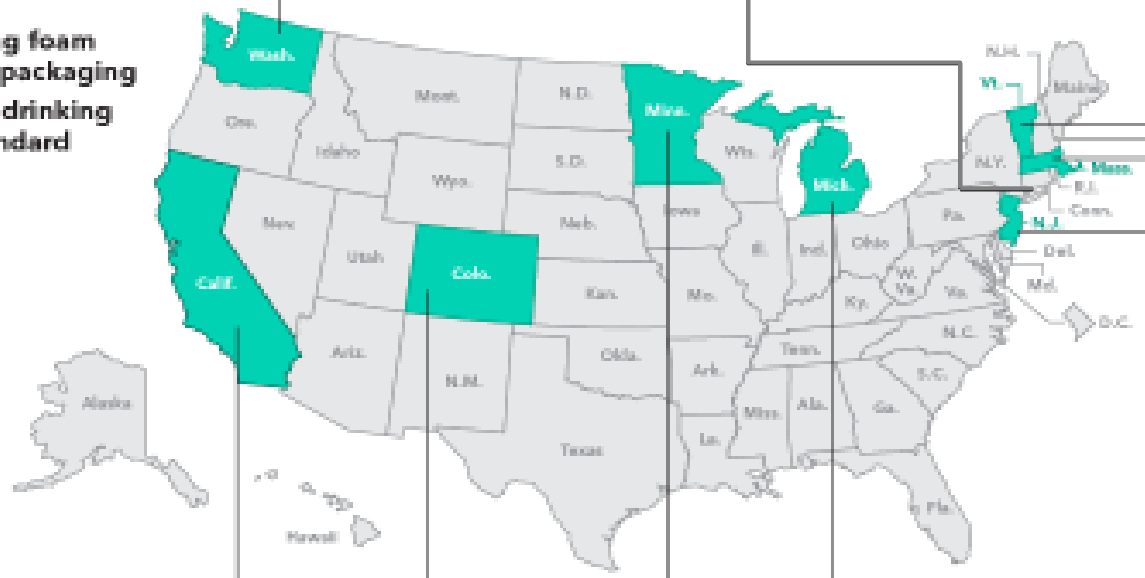
Virginia PFAS Workgroup - Objectives

May develop recommendations for specific maximum contaminant levels (MCLs) for:

- Perfluorooctanoic acid (PFOA)
- Perfluorooctane sulfonate (PFOS)
- Perfluorobutyrate (PFBA)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorohexane sulfonate (PFHxS)
- Perfluorononanoic acid (PFNA)

And other PFAS “as deemed necessary”

States With Numerical PFAS Limits



Connecticut
Σ (PFOA , PFOS, PFNA, PFHxS, PFHpA) < 70ppt

Washington
- Banned in firefighting foam and food packaging
- Proposed drinking water standard

Vermont
- 20 PPT (PFAS)
- Drinking water health advisory for 5 PFAS

New Hampshire
12 ppt PFOA
15 ppt PFOS
11 ppt PFNA
18 ppt PFHxS

Massachusetts
- ~~70 PPT~~ (PFAS)
- State guidance fo concentrations of ~~5~~ PFAS in drinking water

20 ppt Σ (PFOA , PFOS, PFNA, PFHxS, PFHpA, PFDA)

New Jersey
- Set PFNA standard at 13 ppt
- ~~Weighing proposed standards for:~~
  PFOA at 14 ppt
  PFOS at 13 ppt

California
- 14 PPT (PFOA)
- ~~13 PPT (PFOS)~~
- Drinking water notification guidance

40 ppt PFOS

Colorado
- PFOA/PFAS listed as hazardous waste
- 70 PPT (Combined PFOA/PFOS)
- Groundwater quality standard for El Paso County only

Minnesota
- 35 PPT (PFOA)
- ~~27 PPT (PFOS)~~
- Health-based guidance values

15 ppt PFOS
47 ppt PFHxS

Michigan
- ~~70 PPT (Combined P~~
- State standard for c in drinking water

8 ppt PFOA
16 ppt PFOS
6 ppt PFNA
51 ppt PFHxS
420 ppr PFBS
400,000 PFHxA
370 ppt Gen X

Bloomberg Environment

VIRGINIA DEPARTMENT OF HEALTH
...g You and Your Environment

	California	Connecticut	Massachusetts	Michigan	Minnesota	New Hampshire	New Jersey	New York	Vermont	EPA*	avg
	Response Level	Action Level	MCL	MCL	Health Advisory	MCL	MCL	MCL	MCL	Health Advisory	
PFOA	10	✓	✓	8	35	12	14	10	✓	✓	14.8
PFOS	40	✓	✓	16	15	15	13	10	✓	✓	18.2
PFNA		✓	✓	6		11	13		✓	not included	10.0
PFHxS		✓	✓	51	47	18			✓	not included	38.7
PFHpA		✓	✓						✓	not included	
PFDA		not included	✓						not included	not included	
PFBS		not included	not included	420					not included	not included	
PFHxA		not included	not included	400000					not included	not included	
Gen X		not included	not included	370					not included	not included	
SUM		70	20						20	70	

Updates from March Policy Subgroup Meeting

Michigan: recently issued press release about compliance – summary of 1st round of sampling; most utilities are in compliance, some lag in getting data from smaller PWS, NTNCs… MI has $500M grant program to help utilities with compliance issues (PFAS + other issues); compliance is based on running average, similar to DPBs v. individual test results.

https://www.michigan.gov/pfasresponse/0,9038,7-365-86513_96296-557120--,00.html

Minnesota: "Minnesota's PFAS Blueprint" - a broad program to address PFAS, including risk assessment for water, air emissions, landfills, etc.; designate all PFAS as hazardous; require companies to disclose use of PFAS; focus on remediation at landfills, etc.

https://www.pca.state.mn.us/sites/default/files/p-gen1-22.pdf

Important information to convey re PFAS

PFAS stands for perfluoroalkyl and polyfluoroalkyl substances.

Clarify that while there are many compounds that fall within the PFAS category, VDH is currently studying the occurrence of six specific PFAS:

- perfluorooctanoic acid (PFOA)
- perfluorooctaine sulfonate (PFOS)
- perfluorobutyrate (PFBA)
- perfluoroheptanoic acid (PFHpA)
- perfluorohexane sulfonate (PFHxS), and
- perfluoronanoic acid (PFNA).

VDH has been tasked with assessing whether and at what level a regulatory standard (known as a maximum contaminant level or MCL) should be set for the presence of these six PFAS constituents in drinking water.

Important information to convey re PFAS

As part of that process, VDH has asked drinking water providers across the Commonwealth to voluntarily undertake sampling in order to determine where and at what levels PFAS might be present.

Given the ubiquitous presence of PFAS in the environment, and the fact that it is found in many items manufactured for household uses such as carpeting, clothing, food packaging, and non-stick cookware, PFAS is expected to be detected in the collected samples.

This data will not be used to require any response action or as the basis for enforcement; it is being collected to inform the need to establish a regulatory standard, and to assess the prevalence of PFAS in Virginia. Should an MCL be developed, the process for establishing it will be initiated in January 2022.

While VDH is sampling drinking water systems, the Virginia Department of Environmental Quality will also be conducting sampling to determine potential sources of PFAS.

EPA is currently engaged in a rulemaking process for PFAS.

Drinking Water Facts: Released April 2021

Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water

• Per- and polyfluoroalkyl substances (PFAS) are a group of chemicals with many commercial and industrial uses.

• PFAS have been associated with a variety of adverse health effects in humans, but it has not been definitively established that PFAS cause these effects.

• Six states, including Michigan, Massachusetts, and New Jersey, have established drinking water regulations for specific compounds within the PFAS family, including PFOA, PFNA, and PFOS. Virginia, through the State Board of Health and Virginia Department of Health (VDH), is conducting research to determine levels of PFAS contamination in drinking water and major water sources. VDH will use this data to establish regulations for PFAS in drinking water in Virginia.

What are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a complex family of manmade fluorinated organic chemicals which have been produced since the mid-20th century. It has been estimated that the PFAS family may include approximately 5,000 to 10,000 chemicals, with a recent inventory identifying more than 4,700 PFAS that could have been, or may be, on the global market. The unique physical and chemical properties of PFAS impart oil and water repellency, temperature resistance, and friction reduction to a wide range of products used by consumers and industry. For example, PFAS, have been used in coatings for textiles, paper products, cookware, and to formulate some firefighting foams, and have a range of applications in the aerospace, photographic imaging, semiconductor, automotive, construction, electronics, and aviation industries.

How can I be exposed to PFAS?

While consumer products and food (via packaging) are the largest source of exposure to these chemicals for most people, drinking water can be an additional source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility, for example, an airfield at which they were used for firefighting or a facility where these chemicals were produced or used. PFAS can enter drinking water

experimental animals, some PFAS have been found to cause developmental, immune, neurobehavioral, liver, endocrine, and metabolic toxicity, generally at levels well above human exposures. Some studies of the general population, communities with drinking water exposures, and exposed workers suggest that PFAS increase the risk of a number of health effects. The most consistent human health effect findings for PFOA (perfluorooctanoic acid) – the most well-studied of the PFAS – are increases in serum cholesterol, some liver enzymes, and uric acid levels. For PFOS (perfluorooctane sulfonate), the most consistently found human health effects include increased serum cholesterol and uric acid levels. PFOA and PFOS have been associated with decreased antibody response following vaccination.

PFOA and PFOS caused tumors in rodents. In a community with substantial exposure to PFOA through drinking water, PFOA exposure was associated with higher incidence of kidney and testicular cancers.

How can PFAS affect children?

In experimental animals, some PFAS cause developmental effects. In humans, exposure to PFAS before birth or in early childhood may result in decreased birth weight, decreased immune responses, and hormonal effects later in life. More research is needed to understand the role of PFAS in

Information re PFAS

Information for Waterworks re PFAS

There is no regulatory limit on the concentration of PFAS in drinking water.

EPA has established a voluntary health advisory threshold for the sum of two of the PFAS chemicals, PFOS and PFOA, at 70 parts per trillion.

The science in this area is still evolving, and there is no consensus among states as to the appropriate MCL value.

This data will also be used to assess issues associated with application of the analytical method, concerns about cross contamination during sample collection, and other considerations to be applied when VDH develops an MCL. [Sampling instructions concerns about the potential for cross contamination] [also to explain to the public the widespread nature of PFAS]

Once the sampling results are collected, VDH will consider the establishment of an MCL, as well as the regulatory requirements that result from an exceedance of that MCL.

VDH is also closely tracking EPA's efforts to develop a federal MCL.

Before shipping samples, things to remember

- Ship samples on Monday – Thursday
  - Samples shipped on Friday will arrive on Monday, will be hot, and will be rejected!
- Write email address on chain of custody to receive laboratory report

What to expect after sampling

Laboratory turn-around time is 10 business days from receipt

Laboratory Reports:

- Laboratory reports (PDF) emailed to ODW and waterworks
- Electronic Data Deliverable (EDD) emailed to ODW

ODW will file PDF reports

ODW will maintain results in a searchable database

- Reports for Virginia PFAS Workgroup
- Not in the Safe Drinking Water Information System (SDWIS) database
- Not available on Drinking Water Watch on ODW's website

What to expect after sampling

ODW Envisions data will become public through:

- Freedom of Information Act (FOIA) Requests
  - ODW will notify utilities of data requests
- ODW's publicly-facing website
  - ODW will notify utilities in advance of making this public
  - Envisioning a clickable map that will display data
  - Possible PFD or Excel spreadsheet of data
- Report to the General Assembly
  - ODW will share the data table with utilities as part of the drafting
  - Draft by August

Data Handling

Quality Assurance Project Plan (QAPP)

- Specifies project quality assurance requirements

Should not use data that fails method quality control criteria

- Evaluate if data meets Quality Control (QC) criteria
- Evaluate usability and bias of data not meeting criteria

Data Validation

At a minimum for all laboratory reports ODW will:

- Compare laboratory report to database records (Electronic Data Deliverable)
- Review reports for:
  - data qualifiers indicating a data quality problem,
  - confirm field reagent blanks are clean, and
  - Surrogates/spikes are within tolerances.

ODW will conduct in-depth validation activities on all reports with data qualifiers indicating a data quality problem.

ODW will conduct in-depth validation activities on at least 5% of the samples.

All data will go through this data validation before it becomes public facing.

In-depth Data Validation

Reviewing laboratory records

Method 533 requirements:

- Preservation and holding times
- Instrument performance check
- Initial calibration
- Quality Control of Samples
- Continuing Calibration Check
- Field Duplicates
- Field Reagent Blanks
- Laboratory Fortified Sample Matrix
- Blanks
- Surrogate Analyte Standard percent recovery
- Laboratory Fortified Blank
- Matrix spike and matrix spike duplicate analysis
- Internal Standard
- Target Analyte Identification
- Target Analyte Quantification
- System Performance
- Performance Evaluation Sample
- Regional Quality Assurance and Quality Control
- Overall Assessment of Data

Data Reporting

EPA Method 533 – for each analyte:

Practical Quantitation Limit (PQL) is defined as the minimum concentration of an analyte that can be measured with a high degree of confidence that the analyte is present at the reported concentration. Concentrations at or above the PQL are accurate to within 10% of the true value.

Limit of Quantification (LOQ) = 4 ng/L The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specific degree of confidence. It is also the lowest concentration that produces a quantitative result within specified limits of precision and bias.

PQL is the LOQ for this project

Data Reporting

Minimum Reporting Level (MRL) = 1 ng/L – The minimum concentration that may be reported by a laboratory as a quantified value for a method analyte. For each method analyte, the concentration of the lowest calibration standard must be at or below the MRL and the laboratory must demonstrate its ability to meet the MRL per the criteria defined in this method.

Method Detection Limit (MDL) - The method detection limit (MDL) is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results.

MDL is the MRL for this project

Data Reporting

- Results in the range of PQL down to MDL or 1 to 4 ug/L will be “estimated” and will receive an I or J qualifier
- Results less than the MDL will receive a U qualifier
- Analyte in both sample and method blank will receive a V qualifier and is invalid

Laboratory Reports

Lab ID: **J2101111001** Date Received: 01/22/21 10:54 Matrix: Drinking Water

Sample ID: **Well Head Pre-Treatment** Date Collected: 01/21/21 09:49

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: E533 Analysis, Water	Preparation Method: EPA 533 Analytical Method: EPA 533							
PFOS	2.9	I	ng/L	1	3.4	0.84	1/29/2021 21:46	J
PFOA	1.3	I	ng/L	1	3.4	0.84	1/29/2021 21:46	J
13C4-PFBA (S)	67.86		%	1	50-150		1/29/2021 21:46	
13C5-PFPEA (S)	68.09		%	1	50-150		1/29/2021 21:46	
13C3-PFBS (S)	71.65		%	1	50-150		1/29/2021 21:46	
13C2-4:2FTS (S)	86.89		%	1	50-150		1/29/2021 21:46	
13C5-PFHXA (S)	69.17		%	1	50-150		1/29/2021 21:46	
13C4-PFHPA (S)	69.48		%	1	50-150		1/29/2021 21:46	

Laboratory Reports

Lab ID: **J2101111003** Date Received: 01/22/21 10:54 Matrix: Drinking Water

Sample ID: **FRB** Date Collected: 01/21/21 10:20

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: E533 Analysis, Water	Preparation Method: EPA 533 Analytical Method: EPA 533							
PFOS	0.96	U	ng/L	1	3.9	0.96	1/29/2021 20:47	J
PFOA	0.96	U	ng/L	1	3.9	0.96	1/29/2021 20:47	J
13C4-PFBA (S)	73.07		%	1	50-150		1/29/2021 20:47	
13C5-PFPEA (S)	72.07		%	1	50-150		1/29/2021 20:47	
13C3-PFBS (S)	75.43		%	1	50-150		1/29/2021 20:47	
13C2-4:2FTS (S)	91.05		%	1	50-150		1/29/2021 20:47	
13C5-PFHXA (S)	71.03		%	1	50-150		1/29/2021 20:47	
13C4-PFHPA (S)	74.36		%	1	50-150		1/29/2021 20:47	
13C3-PFHXS (S)	75.77		%	1	50-150		1/29/2021 20:47	
13C2-6:2FTS (S)	80.96		%	1	50-150		1/29/2021 20:47	
13C8-PFOA (S)	71.53		%	1	50-150		1/29/2021 20:47	
13C9-PFNA (S)	70.19		%	1	50-150		1/29/2021 20:47	
13C8-PFOS (S)	71.51		%	1	50-150		1/29/2021 20:47	
13C2-8:2FTS (S)	76.19		%	1	50-150		1/29/2021 20:47	

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

Lab ID: **J2100638002** Date Received: 01/13/21 09:53 Matrix: Water

Sample ID: **TYN0112-1 BLANK** Date Collected: 01/12/21 09:27

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: PFAS Analysis, Water	Preparation Method: AEL SOP-041/LCMSMS Analytical Method: AEL SOP-041/LCMSMS							
4:2 FTS	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
6:2 FTS	**2.4**	**I**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
8:2 FTS	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
NEtFOSAA	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
NMeFOSAA	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
PFBS	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
PFBA	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
PFDS	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
PFDA	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
PFDoA	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
PFHpS	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
PFHpA	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J
PFHxS	**1.0**	**U**	**ng/L**	**1**	4.0	1.0	1/15/2021 01:10	J

Laboratory Reports

Parameter	CAS Number	Results	Q	DL	LOD	LOQ	Units
11-Cl-PF3OUdS	763051-92-9	1.8	U	0.88	1.8	3.5	ng/L
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	39108-34-4	1.8	U	0.88	1.8	3.5	ng/L
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	757124-72-4	1.8	U	0.88	1.8	3.5	ng/L
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	27619-97-2	1.8	U	0.88	1.8	3.5	ng/L
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	1.8	U	0.88	1.8	3.5	ng/L
9Cl-PF3ONS	756426-58-1	1.8	U	0.88	1.8	3.5	ng/L
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	113507-82-7	1.8	U	0.88	1.8	3.5	ng/L
Perfluoro-3-methoxypropanoic acid (PFMPA)	377-73-1	1.8	U	0.88	1.8	3.5	ng/L
Perfluoro-4-methoxybutanoic acid(PFMBA)	863090-89-5	1.8	U	0.88	1.8	3.5	ng/L
Perfluorobutanesulfonic acid (PFBS)	375-73-5	5.5		0.88	1.8	3.5	ng/L
Perfluorobutanoic acid (PFBA)	375-22-4	3.1	J	0.88	1.8	3.5	ng/L
Perfluorodecanoic acid (PFDA)	335-76-2	1.8	U	0.88	1.8	3.5	ng/L

Electronic Data Deliverable

	Method	CAS	Parameter	Dilution	Adjusted Detection Limit	Adjusted Reporting Limit	Final Result	Units	Qualifier_Only	Qualifiers	Spike
64	EPA 533	919005-14-4	ADONA	1	0.88	3.5	0.88	ng/L	U		
65	EPA 533	13252-13-6	HFPO-DA	1	0.88	3.5	0.88	ng/L	U		
66	EPA 533	151772-58-6	NFDHA	1	0.88	3.5	0.88	ng/L	U		
67	EPA 533	375-22-4	PFBA	1	0.88	3.5	3.103	ng/L	I		
68	EPA 533	375-73-5	PFBS	1	0.88	3.5	5.5	ng/L			
69	EPA 533	335-76-2	PFDA	1	0.88	3.5	0.88	ng/L	U		
70	EPA 533	307-55-1	PFDoA	1	0.88	3.5	0.88	ng/L	U		
71	EPA 533	113507-82-7	PFEESA	1	0.88	3.5	0.88	ng/L	U		
72	EPA 533	375-85-9	PFHpA	1	0.88	3.5	1.2	ng/L	I		
73	EPA 533	375-92-8	PFHpS	1	0.88	3.5	0.88	ng/L	U		
74	EPA 533	307-24-4	PFHxA	1	0.88	3.5	2.5	ng/L	I		
75	EPA 533	355-46-4	PFHxS	1	0.88	3.5	0.93	ng/L	I		
76	EPA 533	863090-89-5	PFMBA	1	0.88	3.5	0.88	ng/L	U		
77	EPA 533	377-73-1	PFMPA	1	0.88	3.5	0.88	ng/L	U		
78	EPA 533	375-95-1	PFNA	1	0.88	3.5	0.88	ng/L	U		
79	EPA 533	335-67-1	PFOA	1	0.88	3.5	2.3	ng/L	I		
80	EPA 533	1763-23-1	PFOS	1	0.88	3.5	3.2	ng/L	I		
81	EPA 533	2706-90-3	PFPeA	1	0.88	3.5	6	ng/L			
82	EPA 533	2706-91-4	PFPeS	1	0.88	3.5	0.88	ng/L	U		
83	EPA 533	2058-94-8	PFUnA	1	0.88	3.5	0.88	ng/L	U		
84	EPA 533	763051-92-9	11Cl-PF3OUdS	1	0.84	3.4	0.84	ng/L	U		
85	EPA 533	13C24:2FTS	13C2 4:2FTS	1							

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Public Comment

Other PFAS Events:

PFAS Workgroup – April 29, 2021, 1 - 3 p.m.

PFAS Policy Subgroup – May 17, 2021

Review fact sheet(s), provide feedback (prior to Workgroup meeting)

Post meeting minutes, information on the PFAS website (in addition to Town Hall)

PFAS Workgroup – April 29, 2021, 1 - 3 p.m.

Nelson Daniel

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