



December 12, 2019

PORTSMOUTH WATER PFAS UPDATE

The City of Portsmouth’s water system is now performing PFAS testing for the recently adopted New Hampshire Maximum Contaminant Levels (MCLs) compounds: PFOA, PFOS, PFHxS and PFNA at the recommended low detection limits of 2 parts-per-trillion (ppt). Currently, due to a recent lawsuit, on November 26, 2019, a NH court issued a preliminary injunction against NH’s newly adopted PFAS MCLs. The injunction is scheduled to go into effect on December 31, 2019. However, we had already taken our samples per this requirement and will continue to do so quarterly. Results from this testing show that all of Portsmouth Water’s sources are in compliance with the New Hampshire MCLs.

The following table provides a summary of the most recent Portsmouth water system testing results. Per the NHDES rules, we will also begin to report the data as a 4-quarter rolling average, which will begin when we perform our next sampling in January 2020.

PFAS Sampling for October 25, 2019

Sample Point	PFHxS	PFNA	PFOS	PFOA
NH MCL in Parts per Trillion (PPT)	18	11	15	12
Bellamy Reservoir	ND	<2	<2	2
Madbury Water Treatment	<2	<2	<2	2
Madbury Well 2	<2	ND	<2	3
Madbury Well 3	<2	<2	<2	3
Madbury Well 4	<2	ND	ND	<2
Collins	2	<2	3	2
Greenland	2	<2	3	3
Portsmouth	6	<2	4	5

Notes:

- <2 is anything detected below the 2 ppt reportable level
- “ND” is considered Non Detect or below the laboratory detection capability
- “NH MCLs” are the New Hampshire Maximum Contaminant Levels (effective October 1, 2019 but currently unenforceable due to ongoing lawsuit)
- Laboratory Analytical Method – EPA 537.1 M (Bureau Veritas laboratory)

TAP SAMPLING WITH TESTING FOR PEASE

The City was approached by *Testing for Pease* about performing tap sampling in the Portsmouth water system to confirm PFAS levels in the distribution system. *Testing for Pease* had obtained funding to perform sampling at four selected sites within the Portsmouth water system to measure the PFAS concentrations at various locations to determine blended values of compounds from the water supply sources. They also utilized an alternative laboratory method (Isotope Dilution) that detects compounds at the lowest level possible. In conjunction with the sampling the City of Portsmouth also took duplicate samples at our water sources and utilized the Isotope Dilution method. Based on the data of the four New Hampshire MCL regulated compounds presented in the table below, the results from the tap samples align very well with our source sample results. A copy of the full report results for all compounds is also attached at the end of this update. The report includes only those compounds that had detected results per the laboratory method utilized.

PFAS Tap Sampling for October 25, 2019

Sample Point	PFHxS	PFNA	PFOS	PFOA
NH MCL in Parts per Trillion (PPT)	18	11	15	12
Banfield Road	1.7 J	ND	1.9 J	2.5
Dondero School	1.4 J	ND	1.7 J	2.6
Portsmouth Library	ND	ND	0.67 J	2.1
Spinnaker Rec Cntr	0.40 J	ND	0.69 J	2.0 J

Notes:

- "NH MCLs" are the New Hampshire Maximum Contaminant Levels (see previous table note)
- "ND" is considered Non Detect by the laboratory method utilized
- <2 = result is lower than laboratory reportable detection limit of 2 ppt.
- "J" is considered to be an estimated concentration
- Laboratory Analytical Method – Low level by SPE/LCMS (1) EPA 537 M (Bureau Veritas laboratory)

Pease International Tradeport Drinking Water System Monitoring

The Air Force's consultant continues to sample the Pease Tradeport drinking water wells and other monitoring wells in the surrounding area for PFAS. The Pease wells (together with the Portsmouth and Collins wells) are sampled monthly and eleven monitoring wells are sampled quarterly. Sampling data is posted on the City's website once it has been validated by the Air Force's engineering consultant. Information is also posted on the City's website for the City of Portsmouth's PFAS sampling program.

Additional information can be accessed at:

www.cityofportsmouth.com/publicworks/water

or by calling Al Pratt, Water Resources Manager, at: 603-520-0622 or Brian Goetz, Deputy Director of Public Works at: 603-766-1420

PORTSMOUTH 2019-Q4 PFAS RESULTS
WATER SUPPLY -SOURCE WATER SAMPLES
 SAMPLES COLLECTED OCTOBER 25, 2019

METHOD 537.1 M (EPA APPROVED METHOD)

PFAS	NHDES MCL Maximum Contaminant Level	BELLAMY RESERVOIR RAW WATER	MADBURY WTF TREATED WATER	MADBURY WELL 2	MADBURY WELL 3	MADBURY WELL 4	COLLINS WELL	GREENLAND WELL	PORTSMOUTH WELL #1	RDL	MDL
Perfluorohexanoic Acid (PFHxA)	no MCL	1.5	1.6	2.8	2.9	0.9	1.5	3.3	4.7	0.5	0.10
Perfluoroheptanoic Acid (PFHpA)	no MCL	1.2	1.4	1.0	1.5	0.4 J	0.7	1.4	2.7	0.5	0.12
Perfluorooctanoic Acid (PFOA)	12	2.2	2.2	3.0	2.9	1.4	2.4	2.7	4.7	0.5	0.10
Perfluorononanoic Acid (PFNA)	11	0.6	0.5 J		0.4 J		0.2 J	0.2 J	0.4 J	0.5	0.16
Perfluorodecanoic Acid (PFDA)	no MCL									0.5	0.16
Perfluoroundecanoic Acid (PFUnA)	no MCL									0.5	0.14
Perfluorododecanoic Acid (PFDoA)	no MCL									0.5	0.15
Perfluorotridecanoic Acid	no MCL									0.5	0.14
Perfluorotetradecanoic Acid	no MCL									0.5	0.09
Perfluorobutanesulfonic acid (PFBS)	no MCL	1.0 J	1.1 J	2.8	1.4 J	2.5	19.0	2.0	2.6	2.0	0.45
Perfluorohexanesulfonic acid (PFHxS)	18		0.5 J	1.0 J	0.7 J	0.8 J	2.4	2.1	5.7	2.0	0.47
Perfluorooctanesulfonic acid (PFOS)	15	1.1 J	0.8 J	0.9 J	1.3 J		2.8	3.1	3.5	2.0	0.47
MeFOSAA	no MCL									4.0	1.10
EtFOSAA	no MCL									4.0	1.00

ISOTOPE DILUTION METHOD

PFAS	NHDES MCL Maximum Contaminant Level	BELLAMY RESERVOIR RAW WATER	MADBURY WTF TREATED WATER	MADBURY WELL 2	MADBURY WELL 3	MADBURY WELL 4	COLLINS WELL	GREENLAND WELL	PORTSMOUTH WELL #1	RDL	MDL
Perfluorobutanoic acid (PFBA)	no MCL	1.2 J	34	1.5 J	1.6 J	0.5 J	3.5	1.4 J	2.5	2.0	0.45
Perfluoropentanoic Acid (PFPeA)	no MCL	1.3 J	1.3 J	1.9 J	2.4	0.6 J	1.5 J	2.5	4.3	2.0	0.48
Perfluorohexanoic Acid (PFHxA)	no MCL	1.4 J	1.3 J	2.1	2.1	0.7 J	1.3 J	2.7	3.9	2.0	0.26
Perfluoroheptanoic Acid (PFHpA)	no MCL	1.1 J	1.2 J	0.9 J	1.2 J		0.8 J	1.2 J	2.4	2.0	0.37
Perfluorooctanoic Acid (PFOA)	12	2.2	2.0	2.9	2.7	1.3 J	2.4	2.4	4.3	2.0	0.23
Perfluorononanoic Acid (PFNA)	11									2.0	0.48
Perfluorodecanoic Acid (PFDA)	no MCL									2.0	0.18
Perfluoroundecanoic Acid (PFUnA)	no MCL									2.0	0.38
Perfluorododecanoic Acid (PFDoA)	no MCL									2.0	0.25
Perfluorotridecanoic Acid	no MCL									2.0	0.30
Perfluorotetradecanoic Acid	no MCL									2.0	0.16
Perfluorobutanesulfonic acid	no MCL	1.0 J	1.0 J	2.3	1.3 J	2.2	17	1.7 J	2.3	2.0	0.37
Perfluoropentanesulfonic acid	no MCL								0.5 J	2.0	0.28
Perfluorohexanesulfonic acid (PFHxS)	18		0.4 J	0.8 J	0.6 J	0.7 J	2.1	1.7 J	5.1	2.0	0.33
Perfluoroheptanesulfonic acid	no MCL									2.0	0.63
Perfluorooctanesulfonic acid (PFOS)	15	1.2 J	0.8 J	0.9 J	1.2 J		2.8	3.0	3.6	2.0	0.43
Perfluoronanesulfonic acid	no MCL									2.0	0.55
Perfluorodecanesulfonic acid (PFDS)	no MCL									2.0	0.36
Perfluorooctane Sulfonamide (PFOSA)	no MCL									4.0	0.31
EtFOSAA	no MCL									4.0	0.48
MeFOSAA	no MCL									4.0	0.57
4:2 Fluorotelomer sulfonic acid	no MCL									4.0	0.46
6:2 Fluorotelomer sulfonic acid	no MCL									4.0	0.43
8:2 Fluorotelomer sulfonic acid	no MCL									4.0	0.47
Hexafluoropropyleneoxide Dimer Acid	no MCL									4.0	0.61
4,8-Dioxa-3H-Perfluorononanoic Acid	no MCL									4.0	0.94
9Cl-PF3ONS (F-53B Major)	no MCL									4.0	0.49
11Cl-PF3OUdS (F-53B Minor)	no MCL									4.0	0.80

Notes:

- The EPA Approved Method 537.1 was used for compliance with the NHDES MCL Rules; the Isotope Dilution Method was used to test for additional compounds and for comparison with the tap samples collected by Testing For Pease.
- all values are parts per trillion (ppt)
- RDL = Reportable Detection Limit
- MDL = Method Detection Limit
- Blank cell = compound was not detected above the method detection limit (MDL)
- Result above the RDL
- J = Estimated concentration between the MDL and RDL

TESTING FOR PEASE PFAS RESULTS

TAP WATER SAMPLES

SAMPLES COLLECTED OCTOBER 25, 2019

PFAS	NHDES MCL Maximum Contaminant Level	BANFIELD	DONDERO	LIBRARY	SPINNAKER	RDL	MDL
Perfluorobutanoic acid (PFBA)	no MCL		0.85 J			2.0	0.45
Perfluoropentanoic Acid (PFPeA)	no MCL	1.9 J	1.7 J	1.2 J	1.2 J	2.0	0.48
Perfluorohexanoic Acid (PFHxA)	no MCL	1.9 J	1.6 J	1.3 J	1.2 J	2.0	0.26
Perfluoroheptanoic Acid (PFHpA)	no MCL	1.3 J	1.2 J	1.0 J	1.0 J	2.0	0.37
Perfluorooctanoic Acid (PFOA)	12	2.5	2.6	2.1	2.0 J	2.0	0.23
Perfluorononanoic Acid (PFNA)	11					2.0	0.48
Perfluorodecanoic Acid (PFDA)	no MCL					2.0	0.18
Perfluoroundecanoic Acid (PFUnA)	no MCL					2.0	0.38
Perfluorododecanoic Acid (PFDoA)	no MCL					2.0	0.25
Perfluorotridecanoic Acid	no MCL					2.0	0.3
Perfluorotetradecanoic Acid	no MCL					2.0	0.16
Perfluorobutanesulfonic acid (PFBS)	no MCL	4.0	3.7	1.2 J	1.1 J	2.0	0.37
Perfluoropentanesulfonic acid	no MCL					2.0	0.28
Perfluorohexanesulfonic acid (PFHxS)	18	1.7 J	1.4 J		0.40 J	2.0	0.33
Perfluoroheptanesulfonic acid	no MCL					2.0	0.63
Perfluorooctanesulfonic acid (PFOS)	15	1.9 J	1.7 J	0.67 J	0.69 J	2.0	0.43
Perfluorononanesulfonic acid	no MCL					2.0	0.55
Perfluorodecanesulfonic acid (PFDS)	no MCL					2.0	0.36
Perfluorooctane Sulfonamide (PFOSA)	no MCL					4.0	0.31
EtFOSAA	no MCL		0.69 J			4.0	0.48
MeFOSAA	no MCL					4.0	0.57
4:2 Fluorotelomer sulfonic acid	no MCL					4.0	0.46
6:2 Fluorotelomer sulfonic acid	no MCL					4.0	0.43
8:2 Fluorotelomer sulfonic acid	no MCL					4.0	0.47
Hexafluoropropyleneoxide Dimer Acid	no MCL					4.0	0.61
4,8-Dioxa-3H-Perfluorononanoic Acid	no MCL					4.0	0.94
9Cl-PF3ONS (F-53B Major)	no MCL					4.0	0.49
11Cl-PF3OUdS (F-53B Minor)	no MCL					4.0	0.8

Notes:

all values are parts per trillion (ppt)

RDL = Reportable Detection Limit

MDL = Method Detection Limit

Blank cell = compound was not detected above the method detection limit (MDL)

Result above the RDL

J = Estimated concentration between the MDL and RDL