



NJ DWQI Testing Subcommittee

PQL Report on Perfluorononanoic Acid (PFNA) In Drinking Water

New Jersey Drinking Water Quality Institute

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Sources of Data for PQL Calculation

- Laboratories Certified for PFNA analysis by NJDEP
 - Six labs (4 methods, RLs, MDLs)
- UCMR3 Laboratories Approved for PFNA analysis by EPA, with RL < 20 ng/L
 - Six labs (3 methods, RLs, MDLs)
- Total of 9 laboratories, 4 methods

Laboratory Data Meeting Criteria for Determination of PQL Using MDLs

Laboratory/ Location	Method	Reporting Limit (ng/L)	MDL (ng/L)	Accreditation
American Water Central Laboratory Illinois	EPA Method 537	1	0.13	UCMR3
Axys Analytical Services LTD Canada	Proprietary MLA -060	1	0.4	NELAP-FL
Vista Analytical Laboratory California	EPA Method 537	2	0.342	NELAP- OR Department of Defense
Test America Sacramento California	Proprietary WS-LC-0025 Rev 1.2	2	0.65	Department of Defense
Eurofins Lancaster Laboratories Environmental Pennsylvania	EPA Method 537	2	1	NELPA-NJ
Eurofins Eaton Analytical California	EPA Method 537	2.5	0.35	NELAP-NJ
Eurofins Eaton Analytical California	Proprietary MWH PFC EXTRA	5	0.327	NELAP-NJ
State Hygienic Laboratory-Coralville Iowa	EPA Method 537	16	1.39	UCMR3
BSK Associates California	EPA Method 537	10	0.476	UCMR3
Mean		4.9	0.6	
Median		2.3	0.4	

Bootstrap Estimate of a Confidence Interval of a Mean*

Lower Confidence Limit (ng/L)	Mean (ng/L)	Upper Confidence Limit (ng/L)	Confidence Level Range	Number of Randomly Selected Values
0.36	0.61	0.91	95%	2000

*Generated using the inter-laboratory MDLs

The upper confidence limit of the mean MDL (0.91) x 5
= 4.6 ng/L

Bootstrap Estimate of a Confidence Interval of a Mean*

Lower Confidence Limit (ng/L)	Mean (ng/L)	Upper Confidence Limit (ng/L)	Confidence Level Range	Number of Randomly Selected Values
1.33	2.25	3.42	95%	2000

*Generated using the inter-laboratory reporting limits but eliminating the two laboratories that have RLs above the 95% confidence level of 8.11 ng/L

Summary of Approaches for Calculating a PQL

Approach	Value (ng/L)
NJDEP PQL (median of MDL (0.4) x 5)	2
NJDEP PQL (mean of RL)	4.9
Bootstrap Upper Confidence Limit of MDL (0.91) x 5	4.6
Bootstrap RL Upper Confidence Limit	3.42

Summary of Comments

- Amount of data on occurrence does not warrant the regulation of PFNA
- Response:
 - NJDEP 2009 study: PFNA was detected in 9 of 33 samples (33% of SW samples, 24% of GW samples). Highest value = 96 ng/L
 - Currently, approximately 34% of PFNA samples in NJDEP PFC database have detectable levels of PFNA.
 - UCMR3 approved laboratories report data > 20 ng/L, so lower concentrations of PFNA, such as we have seen in NJ, have not been detected nationwide because of this limitation in the required RL.

Summary of Comments

- Why were the laboratories that were approved under USEPA UCMR3 that used a reporting limit of 20 ng/L excluded from in the calculation of the PQL?
- Response:
 - In the absence of a HB-MCL for PFNA, the Testing Subcommittee used the Draft Interim Specific Ground Water Criterion of 20 ng/L as the starting point; goal was to develop a PQL lower than 20 ng/L if possible.
 - These RL values were not representative of the laboratory analytical capability from the labs that provided the performance information.

Summary of Comments

- More data needed from UCMR3 laboratories on performance less than 20 ng/L
- Response:
 - EPA approved laboratories performing PFNA analyses as part of UCMR3 provided data to Testing Subcommittee voluntarily on performance <20 ng/L.
 - 18 of 20 labs contacted voluntarily provided information
 - 5 definitely could provide lower RL and MDL,
 - 7 thought they could,
 - 6 do not report lower.

Summary of Comments

- Cost of analysis is too high
- Response:
 - Currently, sample costs ranges between \$300-400 per sample. However the cost is volume dependent, with more samples allowing for a lower negotiated price.
 - It is anticipated that greater demand will cause additional laboratories to bring this test online and drive the price point lower through competition, such as took place 25 years ago when public water systems nationwide were required to begin monitoring for volatile organic contaminants.

Summary of Comments

- Too few laboratories are available to perform the high volume of PFNA samples that the DEP would require
- Response:
 - This is a new contaminant with a new analytical method, and the NJDEP will have flexibility in determining monitoring requirements, unlike other contaminant monitoring schedules that are specified in Federal regulation.
 - The monitoring frequency could be the same as existing monitoring rules for volatile organic chemicals or inorganic chemicals, but this determination has not been made.
 - It is anticipated that more laboratory capacity would become available.

In conclusion,

the Testing Subcommittee decided to use the method for deriving the PFNA PQL that takes into consideration both the precision and accuracy of the analytical method.

Therefore the Testing Subcommittee relied on the actual reporting limits from laboratories currently performing PFNA analyses for determining its recommendation.

The Testing Subcommittee recommends a **PQL of 5 ng/L** for PFNA to the DWQI.