From: Beggs, Tauren R - DNR
Sent: Friday, May 25, 2018 10:57 AM
To: Ales, Stephen M - DNR
Cc: Chronert, Roxanne N - DNR (Roxanne.Chronert@wisconsin.gov); Fassbender, Judy L - DNR; Neste, David E - DNR
Subject: FW: PFAS Sample Method Question
Attachments: MI List 2018-05-22 List of PFAS Analytes.pdf

Hi Steve,

1) Does DNR have a preference on what method is used for PFAS sampling between the two stated below? The required method for drinking water is 537.1.1, but there is a modified 537.1.1M for other media that isn't drinking water.

2) The other question is can the Manitowoc work be done under one scope of work? The last time we chatted, I believe that it was preferred to do it under one scope of work. Just wanted to confirm this.

Thanks,

Tauren R. Beggs
Phone: (920) 662-5178
Tauren.Beggs@wisconsin.gov

From: Henderson, Dave [mailto:Dave.Henderson@aecom.com]
Sent: Thursday, May 24, 2018 10:01 AM
To: Beggs, Tauren R - DNR <Tauren.Beggs@wisconsin.gov>
Subject: Manty - sample list

Tauren,

Just to clarify my questions about lab list…

I've attached the MI list that recently came out. Note that they are requiring a minimum analyte list, which is 24 compounds – of which 14 are the EPA Method 537.1.1 listed compounds. They require Method 537.1.1 for Drinking Water and allow other methods for media that is not drinking water (e.g. groundwater).

My team would recommend the 24 list analized by EPA Method 537.1.1M – modified, which uses isotope dilution, as being the currently most accurate.

Again, I just want to make sure I'm meeting the WDNR's overall/statewide approach. Please let me know what list (14 or 24) and what methods (537.1.1 or 537.1.1M) you'd like me to use.

Thanks

dsh

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PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS)
MINIMUM LABORATORY ANALYTE LIST

Below is the minimum laboratory PFAS analyte list for analysis of deer, drinking water, groundwater, surface water, soil, wastewater effluent, and landfill leachate collected by Michigan's Departments of Environmental Quality (MDEQ), Health and Human Services (MDHHS), Agriculture and Rural Development, and Natural Resources.

This minimum analyte list was developed based on the potential for these chemicals to be found in Michigan, the availability of the chemical standards used for testing, and the ability of available laboratories to test for these PFAS. This list includes PFAS that can be tested for in drinking water using United States Environmental Protection Agency (USEPA) Method 537 Rev.1.1, which is the only method that should be used when analyzing drinking water samples. Other testing methodology may be used to test for PFAS in other media (**not** drinking water). This list is not exhaustive of PFAS in Michigan's environment.

A fish icon () precedes those compounds that are also currently being tested for in fish tissue.

Analyte Name	Acronym	Fluorinated Carbon Chain Length	Molecular Formula	CAS Number	USEPA Method 537 Rev. 1.1
 Perfluorotetradecanoic acid	PFTeA	C_{14}	$C_{13}F_{27}COOH$	376-06-7	X
 Perfluorotridecanoic acid	PFTriA	C_{13}	$C_{12}F_{25}COOH$	72629-94-8	X
 Perfluorododecanoic acid	PFDoA	C_{12}	$C_{11}F_{23}COOH$	307-55-1	X
 Perfluoroundecanoic acid	PFUnA	C_{11}	$C_{10}F_{21}COOH$	2058-94-8	X
 Perfluorodecanoic acid	PFDA	C_{10}	$C_9F_{19}COOH$	335-76-2	X
 Perfluorononanoic acid	PFNA	C_9	$C_8F_{17}COOH$	375-95-1	X
 Perfluorooctanoic acid	PFOA	C_8	$C_7F_{15}COOH$	335-67-1	X
 Perfluoroheptanoic acid	PFHpA	C_7	$C_6F_{13}COOH$	375-85-9	X
 Perfluorohexanoic acid	PFHxA	C_6	$C_5F_{11}COOH$	307-24-4	X
 Perfluoropentanoic acid	PFPeA	C_5	C_4F_9COOH	2706-90-3	
 Perfluorobutanoic acid	PFBA	C_4	C_3F_7COOH	375-22-4	
 Perfluorodecanesulfonic acid	PFDS	C_{10}	$C_{10}F_{21}SO_3H$	335-77-3	
Perfluorononanesulfonic acid	PFNS	C_9	$C_9F_{19}SO_3H$	68259-12-1	
 Perfluorooctanesulfonic acid	PFOS	C_8	$C_8F_{17}SO_3H$	1763-23-1	X
Perfluoroheptanesulfonic acid	PFHpS	C_7	$C_7F_{15}SO_3H$	375-92-8	
 Perfluorohexanesulfonic acid	PFHxS	C_6	$C_6F_{13}SO_3H$	355-46-4	X
Perfluoropentanesulfonic acid	PFPeS	C_5	$C_5F_{11}SO_3H$	2706-91-4	

Analyte Name	Acronym	Fluorinated Carbon Chain Length	Molecular Formula	CAS Number	USEPA Method 537 Rev. 1.1
Perfluorobutanesulfonic acid	PFBS	C_{4OMG}	$C_4F_9SO_3H$	375-73-5	X
Perfluorooctanesulfonamide	PFOSA	C_8	$C_8F_{17}SO_2NH_2$	754-91-6	
Fluorotelomer sulphonic acid 8:2	FtS 8:2	C_8	$C_8F_{17}CH_2CH_2SO_3$	39108-34-4	
Fluorotelomer sulphonic acid 6:2	FtS 6:2	C_6	$C_6F_{13}CH_2CH_2SO_3$	27619-97-2	
Fluorotelomer sulphonic acid 4:2	FtS 4:2	C_4	$C_4F_9CH_2CH_2SO_3$	757124-72-4	
2-(N-Ethylperfluorooctanesulfonamido) acetic acid	N-EtFOSAA	C_8	$C_8F_{17}SO_2N(C_2H_5)CH_2COOH$	2991-50-6	X
2-(N-Methylperfluorooctanesulfonamido) acetic acid	N-MeFOSAA	C_8	$C_8F_{17}SO_2N(CH_3)CHCOOH$	2355-31-9	X

Laboratories Providing PFAS Analytical Services

(*The provision of the following links does not constitute an endorsement of the firms that may be identified by those links, nor is it a statement against any firm not on the lists generated. Additionally, the capacity of any identified laboratories to provide services consistent with the MDEQ recommendations above has not been verified and these details should be addressed prior to contracting with any laboratory.*)

- The **U.S. Environmental Protection Agency (US EPA)** has a list of laboratories approved under the UCMR3 program using US EPA Method 537 Rev. 1.1 for PFAS in drinking water: www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule
- The **U.S. Department of Defense, Environmental Laboratory Accreditation Program (US DoD ELAP)** maintains a list of labs for the determination of PFAS in various environmental media other than drinking water on the Defense Environmental Network Information Exchange (DENIX) server: www.denix.osd.mil/edqw/accreditation/accreditedlabs/

Contact Information

Questions regarding PFAS in general, contact:

- **MDHHS Toxics and Health Hotline:**
  800-648-6942
- MDEQ Environmental Assistance Center
  800-662-9278

Questions regarding laboratory information, contact:

- **MDHHS Toxics and Health Hotline:**
  800-648-6942
- **MDEQ Drinking Water Analysis Laboratory**
  517-335-8184