

Sampling Drinking Water for Per- & Polyfluoroalkyl Substances (PFAS) using EPA 537.1

Please read and understand this entire procedure prior to beginning any sampling.

[NOTE: Samples must not exceed 10 °C (50 °F) during the first 48 hours after collection. The maximum holding time for a sample stored above freezing, and at or below 6 degrees C (> 0 °C to ≤ 6 °C) after the first 48 hours is 14 days from sample collection until extraction.

SAMPLING PROCEDURE

BEFORE YOU BEGIN

- (1) It is important to get familiarized with this EPA 537.1 sampling procedure prior to beginning with the sampling. Sampling guidelines must be followed to perform the sampling correctly. Additional PFAS Sampling Guidance is available from the Michigan EGLE MPART website at: https://www.michigan.gov/pfasresponse/0,9038,7-365-88059_91297---,00.html.
- (2) Be aware that PFAS contamination can easily occur while sampling. PFAS can be present in cosmetics & lotions, insect repellents & sunscreens, fast food wrappers, recycled paper products, latex gloves, and certain treated clothing. Best practice is to avoid using these products.
[NOTE: For more specific details, and to find out about approved products vs. non-approved products visit the Michigan EGLE links provided above and in the References section.]
- (3) WASH YOUR HANDS thoroughly prior to beginning with the sample collection.
- (4) Gather and wear all appropriate PPE such as powderless nitrile gloves, safety glasses, etc. Ensure a new clean pair of powderless nitrile gloves are worn for each sampling event.
- (5) Each PFAS kit includes a minimum of six (6) 250-mL bottles.
 - (a) The Trip Blank (TB) bottle contains reagent water preserved with Trizma® crystals and is custody sealed. (Notify the laboratory if this custody seal is broken.)
 - (b) The Field Blank (FB) bottle is an unpreserved 250-mL bottle.
 - (c) The remaining four (4) bottles contain Trizma® crystals as a preservative, and shall be used for sample collection.
- (6) Each bottle is provided in its own dedicated resealable bag. After sampling, return each bottle to the same resealable bag in which it was provided.
- (7) One kit is utilized per sampling site to avoid cross contamination. After sampling, return the contents of each PFAS sample kit to the cooler in which it was originally provided.

SAMPLING STEPS

- (1) Before sample collection, remove any irrigation/filter screen or aerator from the water source. Turn on the COLD-WATER TAP and run the water for 3-5 minutes to let the water temperature stabilize. After this flushing period, decrease the water flow to the thickness of a pencil. Allow water to continuously run during the entire sampling event, and do not shut off the water flow between filling the sample bottles.
- (2) Unbag and uncap both the Trip Blank (TB) bottle and the empty Field Blank (FB) bottle (after breaking the custody seal on the TB bottle). Place each cap upside down to prevent contamination.
- (3) Carefully pour the Trip Blank (TB) contents into the Field Blank (FB) bottle, avoiding any spillage. Cap the bottle that now contains the preserved reagent water, label as Field Blank (FB), and return it to its dedicated resealable bag. The Trip Blank (TB) bottle and its bag may be discarded.
- (4) Unbag and uncap one of the sample bottles (containing preservative), and carefully fill to the bottle neck with sample water. DO NOT OVERFILL. Overfilling will flush out the preservative. Label the bottle as Sample with its identification, and return it to its resealable bag. Immediately repeat this process for the other 3 sample bottles.
- (5) Place all bagged sample bottles back into the cooler in which they were originally sent.
- (6) Place NATURAL ICE that has been double-bagged into the cooler to immediately begin chilling the samples. Samples must not exceed 10 °C (50 °F) during the first 48 hours after collection, and must not exceed 6 °C (42.8 °F) after 48 hours from collection.

FINAL STEPS

- (1) Record the sample location, date, and time on the Chain-Of-Custody (COC) Record, FORM-N0013A. Ensure this information matches that of the bottle labels.
- (2) It is best to have chilled the samples prior to being packed for shipping or transport. Just prior to shipping or transport, repack the cooler with fresh double-bagged NATURAL ICE (drain out as much melted ice as possible).
- (3) Return the samples promptly to the laboratory. The samples MUST remain below 10 °C during the first 48 hours, and at or below 6 °C thereafter.

ACKNOWLEDGEMENT

I hereby acknowledge that I _____ (Int), **HAVE / HAVE NOT** (circle one) collected all submitted samples for Per- and Polyfluoroalkyl Substances (PFAS) testing as summarized above. I understand that not collecting samples using EPA 537.1 procedures may jeopardize the validity of any results obtained.

(Signature)

(Date)

Submit this document with the completed Chain-of-Custody Record that accompanies samples.

Reference Information

Bottles & Supplies

PROVIDED ROUTINELY

- (1) Each PFAS kit for drinking water contains:
 - (a) One Trip Blank (TB) bottle, custody-sealed 250-mL Polypropylene (PP), containing reagent water preserved with Trizma® crystals.
 - (b) One Field Blank (FB) bottle, empty 250-mL Polypropylene (PP)
 - (c) Four unmarked 250-mL Polypropylene (PP) bottles containing Trizma® crystals preservative for sample collection.
- (2) Each bottle is provided in a resealable plastic bag.
- (3) Each PFAS kit for drinking water is provided in its own dedicated cooler.

References

- (1) USEPA. ORD. Center for Environmental Solutions & Emergency Response. 2020. Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). [EPA 537.1, Version 2.0](#). EPA Document #: EPA/600/R-20/006. USEPA: Cincinnati, March.
- (2) Michigan DEQ. 2018. [General PFAS Sampling Guidance](#). MI EGLE: Lansing, October 16.
- (3) Michigan EGLE. 2020. [For Residents – Private Residential Well PFAS Sampling Guidance](#). MI EGLE: Lansing, March.

Revision History

Rev	Description of Change	Originator	Reviewer	Approver	Source File	Effective Date
0	Initial Release (based on working draft)	JEK-296	JKP-288	JMS-225	SOP-N0184-R0.docx	7/20/21