



Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection Guidance

The purpose of this document is to provide guidance on groundwater sampling protocols when collecting sample(s) for analysis for PFAS. Detection of these compounds at very low levels can be influenced by materials that are present at the sampling site, materials used by the sampling agent, or sample container handling practices. For more detailed information, please refer to Standard Operating Procedure (SOP) No. HWRB-21 in the NHDES HWRB Master Quality Assurance Project Plan, prepared for sites investigated through contracts administered by the HWRB.

Because of the potential presence of PFAS in common consumer products and in equipment often used to collect groundwater samples, special handling and care must be taken when collecting PFAS samples. Accordingly, *NHDES strongly recommends that protocols specific to sampling groundwater for the presence of PFAS be used for all well purging and groundwater sampling collection and handling methods, and that the sampling be performed by a consultant familiar with these protocols.*

NHDES recognizes that studies are ongoing to identify the potential for cross-contamination from PFAS-containing items during sampling, and that some studies have found that the referenced guidance may be conservative. NHDES recognizes that studies are ongoing to identify the potential for cross-contamination from PFAS-containing items during sampling, and that some studies have found that the referenced guidance may be conservative. NHDES recommends appropriate quality assurance and quality control sampling be implemented if sampling protocols are modified. Please contact your project manager for further information.

Other information is available from:

- ITRC Fact Sheet “Site Characterization Considerations, Sampling Precautions, and Laboratory Analytical Methods for PFAS” (https://pfas-1.itrcweb.org/wp-content/uploads/2018/03/pfas_fact_sheet_site_characterization_3_15_18.pdf);
- Michigan PFAS Sampling Guidance (https://www.michigan.gov/pfasresponse/0,9038,7-365-86510_87154-469832--,00.html), with a quick reference guide available at: https://www.michigan.gov/documents/pfasresponse/PFAS_Sampling_Quick_Reference_Field_Guide_634603_7.pdf

- “Bottle Selection and other Sampling Considerations When Sampling for Per- and Polyfluoroalkyl Substances (PFAS)” July 2017 <http://www.denix.osd.mil/edqw/home/>

The following table provides a summary of items that may contain PFAS (i.e. prohibited items) and therefore should not be used by the sampling agent at the sampling site. If these potential PFAS-containing items will be used, consider QA/QC testing to evaluate the potential influence on the data.

Category	Prohibited Items	Allowable Items
Pumps and Tubing	Fluoropolymer-containing materials (trademarks may include, but are not limited to: Teflon [®] , Hostafion [®] , Kynar [®] , Neoflon [®] , and Tefzel [®])	High-density polyethylene (HDPE), low density polyethylene (LDPE), or silicone tubing, peristaltic pump or stainless steel submersible pump
Decontamination	Decon 90	Alconox [®] or Liquinox [®] , potable water followed by deionized rinse.
Sample Storage and Preservation	LDPE or glass bottles, PTFE-or Teflon [®] -lined caps, chemical ice packs	Laboratory-provided sample container - <i>preferred</i> ; or, HDPE or polypropylene bottles, regular ice
Field Documentation	Waterproof/treated paper or field books, plastic clipboards, non-Sharpie [®] markers, Post-It [®] and other adhesive paper products	Plain Paper, metal clipboard, Sharpies [®] , pens
Clothing	Clothing or boots waterproofed or treated for stain-resistance with fluoropolymer-containing materials (e.g., Gore-Tex [™] , Tyvek [®] material)	Synthetic or cotton material, previously laundered clothing (preferably previously washed greater than six times) without the use of fabric softeners
Personal Care Products (for day of sample collection)	Cosmetics, moisturizers, hand cream and other related products	Sunscreens (confirm with vendor): Alba Organics Natural Yes to Cucumbers Aubrey Organics Jason Natural Sun Block Kiss My Face Baby-safe sunscreens ('free' or 'natural') Insect Repellents: Jason Natural Quit Bugging Me Repel Lemon Eucalyptus Herbal Armor California Baby Natural Bug Spray BabyGanics Sunscreen and Insect Repellents: Avon Skin So Soft Bug Guard-SPF 30
Food and Beverage	Pre-packaged food, fast food wrappers or containers	Bottled water or hydration drinks

For samples collected from monitoring wells

- When feasible, use single-use, disposable polyethylene or silicone materials (tubing, bailers, etc.) for monitoring well purging and sampling equipment.
- When reuse of materials or sampling equipment across multiple sampling locations is necessary, follow project decontamination protocols with allowed materials identified in the table above, and incorporate collection of equipment rinsate blanks into sampling program, as appropriate.
- When using positive displacement/submersible pump sampling equipment, familiarize yourself with the sampling pump/accessory equipment specifications to confirm that device components are not made of nor contain Teflon® or PTFE.

For samples collected during production well pumping tests

- If feasible, do not use Teflon® tape or pipe thread paste on pipe fittings or sampling tap threads on the pump discharge pipe.
- As with all other sample parameters, the sample for PFCs should be collected at the last hour (or hours) of the pumping portion of the testing program.
- Discharge water should be purged through the sampling tap on the discharge pipe for a minimum of 20 minutes prior to collection of samples.

For samples collected from active production wells

- If feasible, avoid contact with any Teflon® tape or pipe thread paste on pipe fittings or sampling tap threads on the water supply discharge pipe.
- The sample for PFCs should be collected while the production well pump is operating, and, preferably, has been operating for at least one hour.
- Discharge water should be purged through the sampling tap on the discharge pipe for a minimum of 20 minutes prior to collection of samples.

Sample collection method/sequence

- Using new nitrile gloves collect the sample for PFCs ***first***, prior to collecting samples for any other parameters into any other containers; this avoids contact with any other type of sample container, bottles or package materials.
- As with all other samples, do not place the sample bottle cap on any surface when collecting the sample, and avoid all contact with the inside of the sample bottle or its cap.
- When sample is collected and capped, place the sample bottle(s) in an individual sealed plastic bag (e.g. Ziploc®) separate from all other sample parameter bottles, and place in shipping container packed only with ice.