



**DDAGW Standard Operating Procedure  
For Per- and Polyfluorinated Alkyl Substances  
Sampling at Public Water Systems  
Ohio EPA LOE Contractors  
Revision 1.1  
March 3, 2020  
(Final)**

## **1.0 INTRODUCTION**

This document provides guidance for field sampling of Perfluorinated and Polyfluorinated Alkyl Substances (PFAS) in water from public water systems (PWS). This guidance applies to all Ohio EPA Level of Effort (LOE) contractors and subcontractors who collect samples for PFAS analysis.

PFAS are a class of manufactured compounds created from carbon chains bonded to fluorine atoms. The carbon-fluorine bond is one of the shortest and strongest chemical bonds known. The strength of this bond provides the unique characteristics and properties of PFAS. Including persistence in the environment, bioaccumulation, and remediation and treatment difficulties.

PFAS are used to provide water, oil and stain repellency to textiles, carpets and leather, and to create grease-proof and water-proof coatings for paper plates and food packaging. They are also used in chrome plating, Class B fire-fighting foams, and numerous other industrial processes. One of the main challenges that field staff will encounter in successfully sampling for these compounds is to fully appreciate how ubiquitous these substances are in modern life – from the seat and dashboard of the field truck, to the water-resistant boots and jackets we wear. A successful field sampling program depends on staff's awareness of these key factors which will help minimize cross-contamination.

## **2.0 SCOPE**

All LOE contractor personnel and subcontractors who collect or otherwise handle samples for PFAS analysis should review this SOP prior to performing any field work and should carefully adhere to the procedures set forth herein.

## **3.0 RESPONSIBILITIES**

### **Ohio EPA Contract Manager or Project Administrator**

The Ohio EPA Contract Manager or Project Administrator shall provide the Quality Assurance Project Plan (QAPP), the PWS PFAS Sampling Program Work Plan (Work Plan) and this Sampling SOP for field activities. All deviations from the QAPP, Work Plan or Sampling SOP will be reported to the Ohio EPA Quality Assurance (QA) Officer.

### **Ohio EPA Quality Assurance Officer**

The QA Officer is responsible for the quality control management of the entire project. The QA Officer will conduct QC field audits during the sampling process to ensure field crews are adhering to the QAPP, Work Plan and Sampling SOP.

### **LOE Contractor Field Supervisor**

The Field Supervisor shall ensure that all samples are collected in accordance with the QAPP, Work Plan and Sampling SOP. The Field Supervisor is responsible for making logical decisions in the field that may represent changes to the Work Plan and report any Work Plan deviations to the Ohio EPA QA Officer or Ohio EPA Contract Manager.

## **LOE Contractor Field Personnel (Including Subcontractors)**

Field Personnel are responsible for carrying out the PWS PFAS sampling according to specifications outlined in the QAPP, the Work Plan and the Sampling SOP. Field Personnel are required to notify the Field Supervisor of any deviations from the QAPP, Work Plan or Sampling SOP that they encounter in the field. The Field Supervisor should in turn notify the Ohio EPA QA Officer as soon as possible. Any changes or deviations from the QAPP, Work Plan or Sampling SOP are to be documented in field forms or log books.

### **4.0 FIELD PROCEDURES**

#### **General Sampling Considerations**

PFAS are analyzed with detection limits that are some three orders of magnitude lower than those used for trace elements typical of water samples (e.g., ppt vs ppb). To put the parts-per-trillion (ppt) scale into context, one part per trillion is about 1 inch in 250 square miles, 1 second in 32,000 years, or 1 ounce in 7.5 billion gallons of water. This requires that field personnel be especially aware of their surroundings, equipment and that the Sampling SOP is closely followed to minimize the potential for cross contamination and analytical false positives. Attachment 1 includes a list of prohibited and acceptable products for PFAS sampling events, and Attachment 2 provides a PFAS sampling checklist.

#### **Sampling Teams**

- **Two-person sampling teams are highly recommended.** Distributing the workload to ensure attention to the Sampling SOP is easier with a two-person team. Also, having another team member present will increase awareness to conditions and actions that can adversely affect the quality of the sampling effort. Team members should watch each other's movement and activities where possible and identify immediately if someone is observed not following protocol.
- **Work distribution for a two-person sample team**

When sampling for PFAS, a two-person team allows one person to be a dedicated "sample" handler, and the other person the dedicated "document" handler

- The "**Sample**" team member will:
  - Maintain an uncompromised and uncontaminated sample area
  - Be the only team member to handle/manage/label sample containers until they are filled and capped
  - Maintain coolers with ice
  - Not handle field log books, forms or non-essential sampling materials or equipment (e.g., cell phones, clipboards, hand tools, etc.) during the sampling process
  - Not wear wrist watches, wristband fitness trackers or bracelets during the sampling process (i.e., nothing around the wrists)

- The "**Document**" team member will:
  - Maintain the sampling and field log books
  - Complete required field documentation including the chain-of-custody (COC) form, field log and sample shipping paperwork
  - Photograph sampling locations
  - Perform other tasks not directly related to sample collection and handling

### **Sample Site Considerations**

- **Split sample site into two parts**
  - Staging Area (greater than 10 feet away from sample points, i.e., PWS taps, as far as reasonably possible as space allows)
    - This is where all non-essential items should be kept: trucks/vehicles, food, drink, handwashing area, etc.
  - Sampling Area (area within a minimum distance of 10 feet of the sampling point or large as reasonably possible as space allows)
    - Only essential materials, personnel, and equipment should be brought inside this boundary.

### **Personal Hygiene**

- On sampling days, avoid the use of soaps, body washes, shampoos or other personal hygiene products that may contain PFAS. Do not use cosmetics, moisturizers, hand cream or similar products as these may contain PFAS.
- Many sunblock and insect repellents contain PFAS. Attachment 1 includes a list of acceptable products. To help avoid use of sunblock and insect repellents, wear long sleeve cotton shirts and wide brimmed hats.
- Always wash hands after eating, preferably with plain soap (without moisturizing lotions).
- Avoid contact with PFAS-containing products or materials prior to sampling activities. Always wash hands with non-PFAS detergent (Liquinox®, Alconox® or plain bar soap recommended) prior to sampling. Use water from the tap to be sampled for handwashing.<sup>1</sup> **Do not use distilled or bottled water.** Dry hands with a clean paper towel.

### **Field Equipment**

- **Do not use waterproof field books.** Prepare field reports on loose paper on Masonite or aluminum clipboards. Avoid plastic clipboards, binders or spiral hard cover notebooks.
- **Do not use markers.** Use ballpoint pen or pencil, but no permanent markers.
- **Do not use Post-It Notes® or similar adhesive products.**

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<sup>1</sup> In general, dermal contact with water is not a health concern because PFAS are not readily absorbed through the skin. Using water that contains PFAS for showering, bathing, laundry or household cleaning is generally safe (see [www.pfas.ohio.gov](http://www.pfas.ohio.gov)).

- **Do not use “Blue Ice”** for sample cooling or storage of food and drink.

### **Field Gear, Clothing, and Personal Protective Equipment**

- **Disposable powderless nitrile gloves must be worn at all times and changed every time a new (different) activity is undertaken: “When in doubt, change gloves.”**
- **A new pair of nitrile gloves must be donned prior to the following activities at each location:**
  - Contact with sampling bottles or the field reagent blank (PFAS-free water)
  - Sample collection and handling
  - QA/QC sample collection and handling (field reagent blanks, duplicates, matrix spike/matrix spike duplicates)
- **Do not wear synthetic, stain-resistant (stain-treated), or water-proofed (water-resistance) clothing during sampling.** Field clothing should be restricted to natural fibers (preferably cotton). Field clothing should be well-laundered avoiding the use of fabric softeners and dryer sheets. Avoid PFAS-containing clothing such as Gore-Tex®, as well as wind breakers, boots and other apparel that have been treated for water resistance. **Do not wear Tyvek® clothing.**
- **Do not wear boots containing Gore-Tex™** Most field footwear is made with some type of synthetic fiber. They are also commonly treated for water resistance to some degree. Be aware to avoid contact with your footwear in the vicinity of the sample site, and always change nitrile gloves donned when changing footwear, tightening laces, etc. Leather boots that have not been treated with PFAS-containing waterproofing are acceptable.
- If wet conditions are encountered, appropriate clothing that will not pose a risk of cross-contamination should be considered. Fabrics that have been treated with water-repellents should be avoided because they may contain PFAS. Rain gear made from polyurethane and wax-coated materials may be used.

### **Field Vehicle**

- The field vehicle seats may be treated with stain resistant products and represent a source of cross-contamination. The seats should be covered with well-laundered cotton blankets or sheets, especially if sample containers are handled on the vehicle seats. If donning gloves while entering the vehicle, always change gloves after exiting the vehicle.
- A well laundered cotton blanket or sheet should be available for use in any area of the vehicle that samples are handled including the back of an SUV or the bed of a pickup truck.
- The field vehicles should be clean, including the bed/cap area if it is a pickup truck, or any part of the vehicle that may hold the cooler containing samples. “Clean” means no potential sources of PFAS (e.g., fast food wrappers), trash, used sampling gloves, excessive dirt or soil, or materials or equipment that are not necessary for PWS PFAS sampling.

### **Food Breaks**

- Food packaging has historically been treated with PFAS to resist wetting, such as sandwich wrappers, paper cups, coated papers, etc. Field personnel are not to bring any food items into the sampling area for this reason. In addition, any food items must be stored separately from sampling equipment and supplies (i.e., use a designated cooler for food and drink).

- Snacks and meals are not to be eaten in the field vehicle or when sampling. Food breaks should only be taken off-site before, after or between individual PWS sampling events.
- Samplers should always wash their hands after eating lunch or snacks.

### **Visitors**

- Due to the high risk of inadvertent cross-contamination visitors to the site should remain at a reasonable distance (at least 30 ft) from the sampling area.
- The PWS operator or designated contact should be at least 10 feet from sample tap or as far as reasonably possible, but they may fall inside the 30ft radius required for visitors.
- If approached by a member of the press, an elected official or other visitor who has questions regarding the sampling activities, politely refer them to Ohio EPA's Public Interest Center (PIC) for assistance from an authorized PIC staff member. Do not attempt to answer any questions on your own, just respond that Ohio EPA has not authorized you to do so. Ohio EPA will provide each Contractor with "Media and Citizen Inquiries" and "Elected Official Inquiries" wallet cards with the appropriate contact information. These cards may be distributed as necessary.

## **5.0 SAMPLE COLLECTION**

Samplers should maintain awareness of all materials that physically contact the sample tap and all sampling equipment. It is important that "muscle memory" not take over and allow a procedure that might be acceptable for other sample constituents but would compromise PFAS sampling.

### **Laboratory**

- The designated laboratory will furnish field personnel with appropriate sampling supplies, including but not limited to sample containers, quality assurance/quality control (QA/QC) containers, chain-of-custody (COC) forms and PFAS-free reagent grade water as required by Method 537.1.
- Samplers are to fill the number of sample and QA/QC containers requested by the laboratory and to follow any associated instructions provided by the laboratory. Be aware that there may be some difference between laboratories, e.g., one versus two containers per sample, use of a temperature blank in the sample cooler, etc. If in doubt, contact the laboratory for instructions. If additional assistance is needed, contact the Ohio EPA QA Officer.

### **Sample Containers and Labels**

- Sample containers will be 250 mL wide-mouth high density polyethylene (HDPE) bottles fitted with an unlined (no Teflon®) polypropylene or HDPE screw cap. Only laboratory-provided sample bottles may be used.
- Sample (and QA/QC) containers are to be pre-preserved in accordance with Method 537.1 and should appear in the bottle as a white crystalline powder.
- The laboratory will provide PFAS-free sample labels. Only labels provided by the laboratory may be used (be aware that some common "waterproof" labels may contain PFAS). Labels should be completed using ball-point pens (no permanent markers).

### **PWS EP and Active RS Tap Sampling Locations**

- At least one PWS Entry Point (EP) tap samples will be collected, and if possible one PWS Raw Source (RS) tap sample will be collected. EP and RS tap sampling locations are defined as follows:

- EP Tap Sampling Location: tap located after the pressure tank, treatment or chemical addition, but before the PWS distribution system
- RS Tap Sampling Location: tap located before the pressure tank, treatment or chemical addition

### **System Purging for PWS EP and Active RS Tap Sampling**

- Determine which wells and/or intakes are operational at the time of sampling and the wells and/or intakes that were operational in the past 24 hours. Record this information on the field form or log book. If the sources have been running for a reasonable amount of time (at least 20 minutes) no additional purging is necessary. If not, purge the source for 20 minutes.
- Flush sample taps for 2 minutes prior to collecting the sample.
  - Use a bucket to collect water during flushing to avoid spilling water on the floor of the sampling area.
  - **Do not flush the tap (the tap should be OFF) when collecting the field reagent blank (FRB).**

### **Tap Grab Sampling**

- Prior to sampling, field staff should:
  1. Prepare the sample cooler with ice, leaving adequate room for the sample containers so that ice does not need to be removed from the cooler after the filled and bagged sample containers are returned to it. To prevent cooler leakage as the ice melts, the cooler should be lined with a large plastic bag or ice should be contained in double plastic (e.g., 1- or 2-gallon Ziplock™) bags.
  2. Inspect EP tap and RS tap sampling locations for ease of access, safety concerns and the presence of materials or conditions that may cause PFAS cross contamination to establish the sampling area and any pre-samplings tasks (e.g. moving materials or equipment to access a tap). If there appear to be logistical or safety conditions under which sampling cannot be performed, or conditions that are likely to adversely affect sample quality, include documentation of the condition in the field notes **and contact the Ohio EPA QA Officer immediately for direction before sampling.**
  3. Remove tubing or hoses from sampling taps (if possible). If the PWS representative is available, they may remove hoses and tubing for the sample team.
  4. Inspect the tap. If grease, oil, Teflon tape/paste or other foreign substances appear to be present on the tap threads, include documentation of the condition in the field notes **and contact the Ohio EPA QA Officer immediately for direction before sampling.**
  5. Take close-up photographs of the EP and RS sampling taps. The tap photos should include the completed field form (header section) for reference. Additional photos may be taken of the sampling areas at the contractor's discretion to document field sampling conditions. If notes need to be included in the photo, use a plain white paper page (8.5 x 11") and ballpoint pen or pencil. All photos should include GIS location data (latitude, longitude). Photos may be taken before or after sampling, but not during sampling.

6. Before beginning the sampling process at each site (i.e., before collecting the FRB), wash hands<sup>2</sup> using Liquinox®, Alconox® or plain bar soap (no moisturizers) and water from the tap to be sampled (**do not use distilled or bottled water**). Dry hands using a clean disposable (single-use) paper towel. If using bar soap, discard the bar after use, and use a new (unused) bar at the next sampling site (we don't want to potentially transport PFAS cross contamination from one site to another via the bar soap).
  7. Don new nitrile gloves (multiple layering of clean gloves is acceptable).
  8. Document the lot numbers from all sampling bottles and the expiration date (if applicable) for the field reagent blank (FRB, PFAS-free water) on the field form or in the field log book.
  9. Complete all label of bottles using ballpoint pen or pencil at any point prior to sampling.
- Ohio EPA recommends that the "Document" team member (Section 4.0) perform tasks 1 through 7 above, and that the "Sample" team member (Section 4.0) perform tasks 6 through 9.

### Sampling Procedures

- Ohio EPA recommends the use of a clean five-gallon PVC bucket to transport the sample bottles (in plastic bags) from the sample cooler to and from the sampling locations (taps). Use of the bucket will help reduce the potential for cross contamination during the sampling process, i.e., bottles can remain in the bucket and not be placed on floors or other potentially contaminated surfaces. The bucket can be placed near the tap to be sampled (i.e., within five to 10 feet), but care should be taken to avoid splashing tap water into the bucket. This bucket should never be used to capture flushed water.
- The sample bottles should remain closed until immediately prior to sample collection and be closed tightly immediately after sample collection. If possible, the sampler should hold the bottle cap during sample collection. After filling, replace the cap securely and shake to completely dissolve the preservative.
- Do not rinse the pre-preserved PFAS sample bottle with sample water prior to sample collection.
- Each PWS sample site (the PWS being sampled) is to be accompanied with an FRB, taken immediately before the EP tap sample.
- The sample sequence will be field reagent blank (FRB), EP tap, QA/QC samples (see Section 6.0) and RS tap.
- Disposal of empty bottles, paper towels, gloves and other one-time use items should occur after all samples have been completed, not during the sampling process.
- To begin the sampling sequence, obtain the FRB:

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<sup>2</sup> In general, dermal contact with water is not a health concern because PFAS are not readily absorbed through the skin. Using water that contains PFAS for showering, bathing, laundry or household cleaning is generally safe ([www.pfas.ohio.gov](http://www.pfas.ohio.gov))

1. **Don't flush the tap while collecting the FRB.**
  2. Don a clean pair of nitrile gloves (multiple layering of clean gloves is acceptable).
  3. Remove the bottles from the bag and verify the label on the empty FRB.
  4. Uncap the empty FRB and the pre-filled PFAS-free water bottles.
  5. Within one minute of uncapping the bottles, slowly pour the PFAS-free water from the pre-filled bottle into the empty FRB bottle, then cap the FRB bottle securely and return it to the bag. Place the bag in the cooler and dispose of the empty pre-filled bottle.
- To obtain the EP or RS tap sample:
    1. Turn on the tap. Reduce the water flow to a near-laminar stream (about 200 to 300 mL/min where possible). Taps should be flushed for 2 minutes. Use a bucket to contain the water from the tap if necessary (i.e., a sink or floor drain is not present); do not allow water to spill over the sampling area floor.
    2. Don a clean pair of nitrile gloves (multiple layering of gloves is acceptable).
    3. Remove sample bottles from bag and verify the label.
    4. Have all sample bottles within reach (again, use of a five-gallon PVC bucket is recommended to avoid placing bottles on the ground or floor). Fill each bottle to its neck, one after the other. Avoid splashing/spilling sample water out of the bottle. Cap all bottles tightly.
    5. Ensure the rim of the sample bottle does not contact the sample tap or other equipment during sample collection.
    6. Once tightly capped, shake the bottles to completely dissolve the preservative.
    7. Return bottles to the bag.
  - Record label information including the sample identification, sample collection date, sample collection time and any other information the laboratory requires on the chain of custody (COC) form. The "Document" team member should be responsible for maintaining the COC.
  - Bagged samples are to be stored on ice as soon as reasonably possible given the site conditions. Remove excess air from bags as the samples are packed (air acts as an insulator).
  - If required (if sample bottles provided), field duplicate, laboratory fortified sample matrix or laboratory fortified sample matrix duplicate QA/QC samples should be collected after the EP tap sample following the procedures described above for EP tap sampling.
  - The PWS may want to collect their own PFAS samples during Ohio EPA's sampling event. If this is the case, the PWS personnel should wait until after Ohio EPA's sampling has been completed. **Do not attempt to collect split samples with the PWS. Ohio EPA LOE contractor personnel should not handle PWS sampling containers, and PWS personnel should not handle Ohio EPA's sampling containers.**
  - All sampling materials should be treated as single use and disposed following completion of sampling at each sample site.
  - See Section 7.0 for shipping procedures.

## **6.0 QUALITY ASSURANCE/QUALITY CONTROL**

The QA/QC samples required for Method 537.1 are referenced in the QAPP (Section B) and summarized below:

### **Field Reagent Blank (FRB)**

- A field reagent blank consists of a single 250 mL bottle of PFAS-free reagent grade water with preservative. This water is to be transferred into an empty 250 mL bottle absent of preservative. The FRB should be collected immediately before the EP sample and collected per Section 5.0.

### **Field Duplicate (FD)**

- A FD will consist of a one or more 250 mL bottles of sample water. The FD should be collected immediately after the EP tap sample and collected in the same manner as the sample in Section 5.0. Per Method 537.1, FDs will be collected at a rate of one per 20 samples. FD bottles will be provided by the laboratory as needed to meet Method 537.1 requirements.

### **Laboratory Fortified Sample Matrix (SM)**

- A SM will consist of a one or more 250 mL bottles of sample water. The SM should be collected immediately after the EP tap sample and collected in the same manner as the sample in Section 5.0. Per Method 537.1, SMs will be collected at a rate of one per 20 samples. SM bottles will be provided by the laboratory as needed to meet Method 537.1 requirements.

### **Laboratory Fortified Sample Matrix Duplicate (SMD)**

- A SMD will consist of a one or more 250 mL bottles of sample water. The SMD should be collected immediately after the EP tap sample and collected in the same manner as the sample in Section 5.0. Per Method 537.1, SMDs will be collected at a rate of one per 20 samples. SMD bottles will be provided by the laboratory as needed to meet Method 537.1 requirements.

### **Temperature Blank**

- Depending on the lab, a temperature blank may accompany each cooler. A temperature blank is simply a water-filled sample bottle that accompanies each cooler. When the samples are received at the laboratory, the temperature of this blank is taken to ensure that all samples are received at 10°C or less. The temperature blank allows the laboratory to make this determination without compromising one of the samples.

### **Trip Blanks**

- No trip blanks should be required to accompany PFAS samples.

## **7.0 SHIPPING**

- Place all sample bags into the cooler with ice (see page 7). If using a cooler liner, squeeze the air out of the liner and tie it off tightly. Ice should not be placed outside of the cooler liner or the cooler may leak as the ice melts. If a sample cooler leaks during shipment, the shipper

may stop or delay delivery to the laboratory. As an alternative to a cooler liner, ice may be contained in double-plastic bags (e.g., 1- or 2-gallon Ziplock™ bags).

- Samples must be chilled during shipment and should not exceed 10°C during the first 48 hours after sample collection per Method 537.1.
- Sample temperature must be confirmed when the samples are received at the laboratory per Method 537.1 and should be at or below 10°C.
- The samples for each site (PWS) should be listed on separate (site-specific) chains of custody (COC). Samples from multiple sites may be included in the same sampling cooler, but the cooler should include a separate COC for each site sampled.
- Same day pre-paid contract agent shipping is recommended. Note that Method 537.1 holding time for PFAS is 14 days.

## **8.0 DOCUMENTATION**

- Ensure that the COC information and all other field documentation is complete and accurate before leaving a PWS sampling location.
- All necessary documentation for sample custody and submission to the laboratory must meet laboratory requirements.
- As described in Section 5.0, all photographs are to be provided to Ohio EPA.
- Copies of all COCs, field notes, photographs or other field sampling documentation are to be provided to Ohio EPA.

## 8.0 REFERENCES

AECOM, 2016 PFAS Sampling Webinar: Technical Training for Waste Site Cleanup Professionals. Chiang, D., presenter. [AECOM, Aug 3, 2016](#).

AECOM, *Poly- and Perfluoroalkyl Substance (PFAS) Sampling and Analysis: Truths, Traps, and Consequences*; June, 2016; [AECOM PFAS Client Webinar](#).

Aerostar SES LLC Standard Operating Procedure 002P Groundwater Sampling at Perfluorinated Compound (PFC) Sites, July 2016 (Revision 2)

Aerostar SES LLC Standard Operating Procedure 028P Field Sampling Protocols to Avoid Cross-Contamination at Perfluorinated Compound (PFC) Sites, July 2016 (Revision 2)

Fujii et al., 2013, Occurrence of perfluorinated carboxylic acids (PFASAs) in personal care products and compounding agents. *Chemosphere* 2013 Sep; 93(3): 538-44.  
10.1016/j.chemosphere.2013.06.049. Epub 2013 Aug 6

Technical Guidance Manual for Ground Water Investigations, Chapter 10, [Ground Water Sampling](#), Ohio Environmental Protection Agency, May 2012.

Tetra Tech, *Standard Operating Procedure, Field Sampling at Per- and Poly-fluorinated Compounds (PFAS) Sites*, [Tetra Tech PFAS SOP](#).

Transport Canada, *Perfluorochemical (PFAS) Field Sampling Protocol*; Revised, May 2013; [TC PFAS Sampling Protocol](#).

<b>Attachment 1: List of Prohibited and Acceptable Products for PFAS Sampling Events</b>	
<b>Prohibited Personal Care Products:</b>	<b>Acceptable Personal Care Products:</b>
<p>On the morning of sampling event, no application of cosmetics, moisturizers, hand creams or related products or use of shampoos, soaps or body washes that may contain PFAS</p>	<p><u>PFAS-free sunscreens:</u></p> <ul style="list-style-type: none"> <li>• Alba Organics Natural Sunscreen™</li> <li>• Yes to Cucumbers™</li> <li>• Aubrey Organics®</li> <li>• Jason Natural Sun Block®</li> <li>• Kiss My Face®</li> <li>• Baby sunscreens labelled “free” or “natural”</li> </ul> <p><u>PFAS-free insect repellants:</u></p> <ul style="list-style-type: none"> <li>• Jason Natural Quit Bugging Me®</li> <li>• Repel Lemon Eucalyptus Insect Repellent®</li> <li>• Herbal Armor™</li> <li>• California Baby Natural Bug Spray®</li> <li>• BabyGanics®</li> <li>• Avon Skin So Soft Bug Guard Plus SPF 30 Lotion®</li> </ul>
<b>Prohibited Field Clothing &amp; PPE:</b>	<b>Acceptable Field Clothing &amp; PPE:</b>
New cotton clothing or water-resistant, waterproof or stain-treated synthetic clothing or boots; Gore Tex™ or Tyvek®	Natural fiber clothing (preferably cotton), well laundered without the use of fabric softeners; boots made with polyurethane, PVC or leather treated only with PFAS-free conditioner or waterproofing
Synthetic water-resistant or waterproof rain gear	Polyurethane or PVC rain gear
<b>Prohibited Field Equipment &amp; Supplies:</b>	<b>Acceptable Field Equipment &amp; Supplies:</b>
Teflon™ or unapproved low-density polyethylene (LDPE) materials ( <i>LDPE sampling bags are acceptable</i> )	Stainless steel, silicon, acetate, polypropylene or high-density polyethylene (HDPE) materials
“Blue ice” or other synthetic ice substitutes	“Wet” ice
Waterproof field books or field forms (e.g., Rite in the Rain®), spiral hard cover notebooks or adhesives (e.g., Post-It Notes®)	Untreated (PFAS-free) paper field forms
Plastic clipboards or binders	Aluminum or Masonite® clipboards
Markers	Ball-point pens and pencils
LDPE or glass sample containers or containers with Teflon-lined caps	HDPE or polypropylene sample containers, sample container with unlined polypropylene caps
Decon 90™	Alconox® or Liquinox®
<b>All food and drink are prohibited during sampling activities with the exception of bottled water and hydration drinks (e.g., Gatorade, Powerade).</b>	

## Attachment 2 – PFAS Equipment Checklist

### Paperwork/Materials

- Business Cards
- Ohio EPA PIC inquiry cards
- Maps
- Site addresses & contact information
- COC forms, field forms, log books
- UPS/FedEx overnight air bill forms

### Field Clothing/PPE

- Field Crew is wearing well-worn cotton clothing (synthetic fabric should be avoided)
- All safety boots made from poly/PVC or leather (not treated with PFAS waterproofing)
- Wet weather gear only made of polyurethane or PVC only
- Cotton covers for field vehicle seats

### Cross Contamination Check List

- Field crew has not used PFAS-containing cosmetics, moisturizers, hand cream, sunscreen, insect repellent or related products on day of sampling.
- Field crew is not wearing clothing laundered with fabric softener/dryer sheets
- No Gore-Tex or Tyvek clothing/boots
- No Teflon or unauthorized LDPE materials
- No blue ice/chem gel packs
- All sample materials made from SS, HDPE, acetate, silicon, or polypropylene
- No waterproof books/labels/paper on site

- No plastic clip boards, or spiral hard cover notebooks on site
- No adhesives (Post-It Notes) on site
- No aluminum foil or fast food wrappers

### Handwashing & Field Decontamination

- Alconox, Liquinox or plain bar soap (no moisturizers) only

### Food

- No food or drink in sampling area; food and drink should only be available in or outside the staging area

### Disposables/Field Equipment

- Powderless nitrile gloves
- Sample table
- 25' garden hose (5/8" diameter)
- Tool kit (wrenches/drivers)
- 5-gallon PVC buckets
- Garbage bags for waste/coolers
- Sample cooler liners (large plastic bags)
- Sampling bags
- Paper towels
- Ice
- Sample & QA/QC bottles
- Ball point pens or pencils for labeling
- Field log book/loose-leaf papers (appropriate material)
- Clipboard (aluminum w/cover)
- Clear poncho for rain/snow sampling cover (polyurethane or PVC only)