

Health, Safety, Environment, & Product Safety 6100 Philadelphia Pike Claymont, DE 19703

April 10, 2018

Mr. William Wu Environmental Engineer New York State Department of Environmental Conservation 625 Broadway, Floor 11 Albany, NY 12233-7014

Subject: April 5, 2018 Request for Sampling of Emergent Contaminants 643 Court St & 182 Sigourney St (Site IDs 224196 and 224197)

Dear Mr. Wu,

Pursuant to your letter dated April 5, 2018 requesting the inclusion of 1,-4-dioxane and per- and polyfluoroalkyl substances (PFAS) within the groundwater sampling program for the referenced sites, Honeywell International Inc (Honeywell) will collect and analyze samples for these constituents from the four shallow and three intermediate wells indicated on Table 1 and shown on Figure 1. A brief discussion of proposed sampling methods is provided on Attachment 1.

If you have any questions in regards to the information provided herein, please contact me at 302-791-6738 or Jim O'Loughlin (Parsons) at 617-449-1563.

Regards,

Steve Coladonato

U- alon

Honeywell

cc: Gardiner Cross, NYSDEC Section Chief

Stephanie Selmer, NYS Department of Health Justin Deming, NYS Department of Health Jeremy Karpatkin, Esq., Arnold & Porter LLP

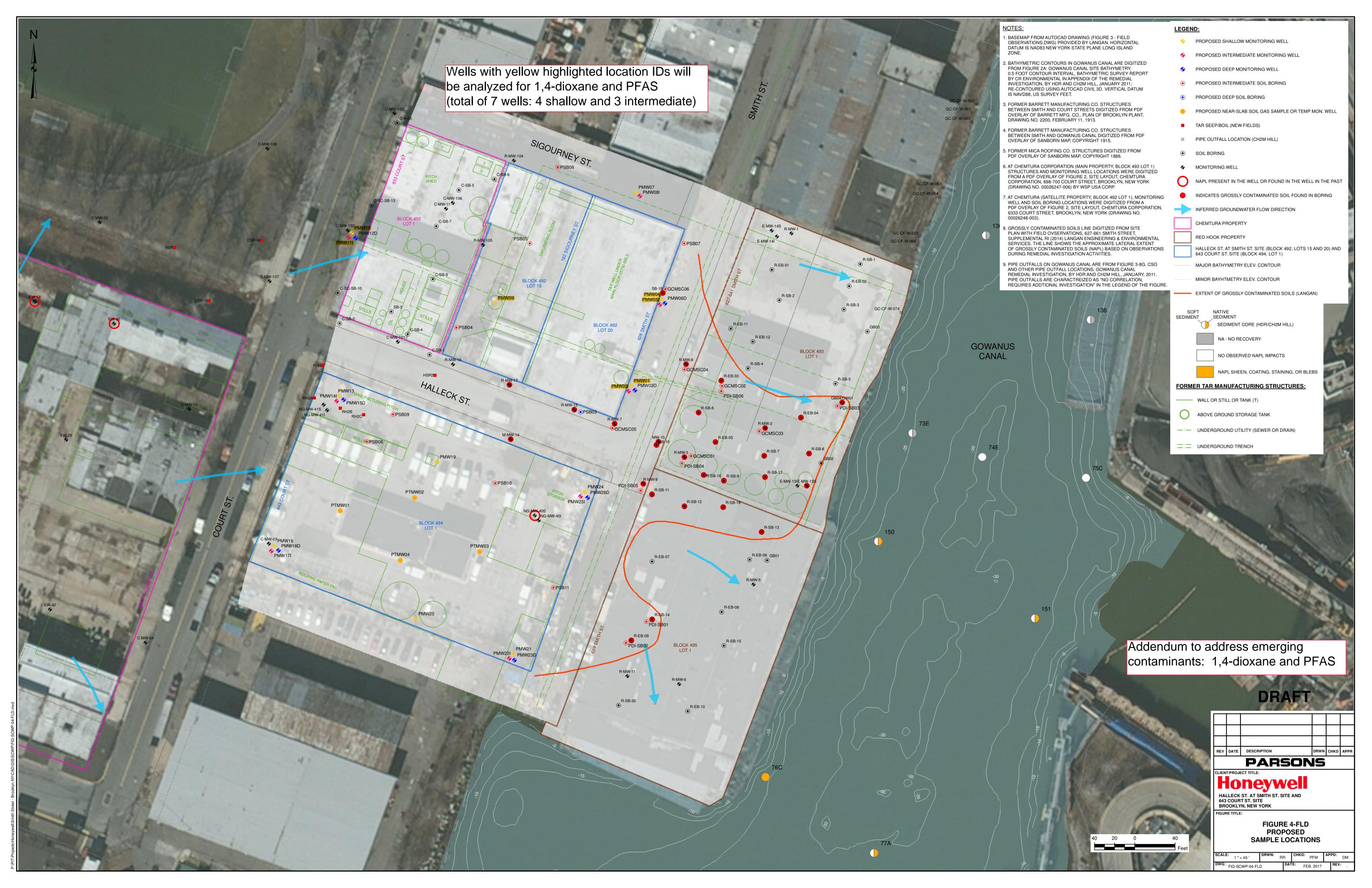
James O'Loughlin, Parsons
Paul Feshbach-Meriney, Parsons

Table 1 Proposed Sampling Locations, Analyses, and Rationale Former Barrett Manufacturing and Mica Roofing Brooklyn, Kings County, New York

					Laboratory Analytical Groundwater							
Location ID	Location (Block/Lot)	Depth (feet)	Location Description	Sampling Strategy			GI	TPH		(4/10/18 Revision)	(4/10/18 Revision)	Rationale
					VOCs	SVOCs ²	Metals & Cn	(sheen net)	PCBs	1,4 Dioxane	PFAS	
PMW01 ⁴	492/20	25	In right-of-way on Smith Street	Soil - None. Groundwater - collect 1 sample	1	1	1	1	0	1	1	Characterize shallow stratigraphy and shallow groundwater chemistry downgradient of the southern portion of the tar well under main floor at 492/20.
PMW02I ⁴	492/20	35	In right-of-way on Smith Street	Soil - None. Groundwater - collect 1 sample	1	1	1	1	0	1	1	Characterize shallow/intermediate stratigraphy and intermediate groundwater chemistry above the confining unit downgradient of the southern portion of the tar well under main floor at 492/20.
PMW03D ⁴	492/20	55	In right-of-way on Smith Street	Soil - collect 2 samples: most contaminated, and for vertical delineation at depth or bottom of boring. Groundwater - collect 1 sample.	1	1	1	1	0			Characterize shallow/intermediate/deep stratigraphy and soil chemistry, and deep groundwater chemistry below the confining unit downgradient of the southern portion of the tar well under main floor at 492/20.
PMW04 ⁴	492/20	30	In right-of-way on Smith Street	Soil - None. Groundwater - collect 1 sample	1	1	1	1	0	1	1	Characterize shallow stratigraphy and shallow groundwater chemistry downgradient of the northern portion of the tar well under main floor at 492/20.
PMW05I ⁴	492/20	40	In right-of-way on Smith Street	Soil - None. Groundwater - collect 1 sample	1	1	1	1	0	1	1	Characterize shallow/intermediate stratigraphy and intermediate groundwater chemistry above the confining unit downgradient of the northern portion of the tar well under main floor at 492/20.
PMW06D ⁴	492/20	60	In right-of-way on Smith Street	Soil - collect 2 samples: most contaminated, and for vertical delineation at depth or bottom of boring. Groundwater - collect 1 sample.	1	1	1	1	0			Characterize shallow/intermediate/deep stratigraphy and soil chemistry, and deep groundwater chemistry below the confining unit downgradient of the northern portion of the tar well under main floor at 492/20.
PMW07	N of 492/20	30	In roadway on Sigourney Street	Soil - None. Groundwater - collect 1 sample	1	1	1	1	0			Characterize shallow stratigraphy and soil chemistry and shallow groundwater chemistry north of the tar well under main floor at 492/20.
PMW08I	N of 492/20	40	In roadway on Sigourney Street	Soil - collect 3 samples: surface 0-2', most contaminated, and for vertical delineation at depth or bottom of boring. Groundwater - collect 1 sample.	1	1	1	1	0			Characterize shallow/intermediate stratigraphy and intermediate groundwater chemistry above the confining unit north of tar well under main floor at 492/20.
PMW09	492/15	30	In parking area between buildings	Soil - collect 2 samples: most contaminated, and for vertical delineation at depth or bottom of boring. Groundwater - collect 1 sample.	1	1	1	1	0	1	1	Characterize shallow stratigraphy and soil chemistry, and shallow groundwater chemistry near underground sewer, an above ground storage tank near Saturating Room at 492/15.
PMW10 ⁴	492/1	30	In sidewalk along Court Street	•	1	1	1	1	0	1	1	Characterize shallow stratigraphy and shallow groundwater chemistry upgradient of 421/1. [Use existing well MW102 as shallow well if the existing well is deemed sound and appropriate.]
PMW11I ⁴	492/1	40	In sidewalk along Court Street	Soil - None. Groundwater - collect 1 sample	1	1	1	1	0	1	1	Characterize shallow/intermediate stratigraphy and intermediate groundwater chemistry above the confining unit upgradient of 421/1.
PMW12D ⁴	492/1	60	In sidewalk along Court Street	Soil - collect 2 samples: most contaminated, and for vertical delineation at depth or bottom of boring. Groundwater - collect 1 sample.	1	1	1	1	0			Characterize shallow/intermediate/deep stratigraphy and soil chemistry, and deep groundwater chemistry below the confining unit upgradient of 421/1.

- 1) GCS = Grossly Contaminated Soil as defined by NYSDEC.
 2) SVOC and NAPL Fingerprinting shall report ABN compounds including phenols.
 3) An intermediate well may be installed depending on chemical results at depth from other nearby wells. Intermediate well is currently not planed.
 4) This location also addresses a data gap identified in NYSDECs December 24, 2014 comment letter to CF Smith, LLC on the Supplemental Remedial Investigation Report at 627-677 Smith Street.

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ATTACHMENT 1

BRIEF DESCRIPTION OF SAMPLING METHODS FOR

EMERGING CONTAMINANTS

The groundwater sampling program will be conducted using the existing sampling methods approved in the Former Barrett Manufacturing and Mica Roofing Site Field Sampling Plan (FSP), Quality Assurance Project Plan (QAPP) and in NYSDEC's DER-10, as modified in this document to account for specific requirements to sample and analyze for 1,4-Dioxane and per- and polyfluoroalkyl substances (PFAS).

Groundwater sampling for the primary chemical classes specified in the approved work plan (VOCs, SVOCs, TAL metals, and TPH sheen net), 1,4-Dioxane, and PFAS will be performed using Low Flow Purge and Sampling (LFPS) methods as outlined in the approved work plan. A peristaltic pump (not a submersible pump¹) will be used to purge and sample all constituents during one event at the well. Other specifics are provided below.

1,4-Dioxane

The groundwater sample for 1,4-dioxane will be collected in the same sample bottle as the SVOCs to be analyzed by EPA Method 8270D. However, the laboratory analysis for 1,4-dioxane will be performed using EPA Method 8270D using selective ion monitoring (SIM) in order to get the appropriate detection limits. The method detection limit (MDL) for 1,4-dioxane will be no higher than 0.28 µg/l (ppb).

PFAS

Table A1 includes a summary of prohibited and acceptable items for sampling PFAS, as it pertains to clothing, equipment, sampling and decontamination. Additional specifics are provided below.

Clothing

- Clothing that contains PTFE material (including GORE-TEX®) or that has been waterproofed with PFAS materials must be avoided. Many food and drink packaging materials and "plumbers thread seal tape" contain PFASs.
- All clothing worn by sampling personnel must have been laundered multiple times. Field clothing should be washed using a minimal use of unscented detergent and no fabric softener or other additives. Once clean, the clothing should be washed again in water only before drying. No fabric conditioner or dryer sheets should be used while drying.
- Do not wear clothing made of synthetic fibers. Clothing worn during field sampling should be made of natural fiber such as cotton or wool.
- Safety toe boots made from synthetic fibers and treated for water resistance are acceptable for use
 in order to maintain personnel protection. However, handling of boots (e.g., tying shoe laces) is to
 be made at least 10 meters (33 feet) away from the work area. New gloves are to be donned prior
 to making contact with the boots and are to be disposed immediately afterwards. Boots containing
 Gore-Tex and/or Tyvek are not to be used on site.

¹ Per NYSDEC's *PFAS Groundwater Samples from Monitoring Wells Sample Protocol* Revision 1.2 June 29, 2016 NOTE: Grunfos pumps and bladder pumps are known to contain PFAS materials (e.g. Teflon™ washers for Grunfos pumps and LDPE bladders for bladder pumps).

 Vehicle seating is often treated with stain resistant products. Therefore, direct contact with vehicle seats should be avoided by covering each seat with a well laundered cotton sheet for the duration of the sampling event.

Personal Hygiene

- On the day of sampling, field personnel should not use shampoo, conditioner, body gel, cosmetics, or cosmetic/hand/body creams as part of their personal hygiene routine. The use of bar soap is acceptable; however, bar soaps containing additional moisturizers should be avoided.
- It is recommended that field personnel shower the night before the sampling event and rinse with water only the morning of the sampling event.
- Cosmetics, moisturizers, sunscreens, insect repellant, and dental floss, except for those in Table 1, shall not be used on or off site throughout the duration of the field sampling program.
- For restroom breaks, field personnel shall move at least 10 meters from the work area before removing gloves and overalls. Personnel should wash their hands as normal allowing for extra time for rinsing after soap use. It is preferred to dry hands after washing using a hand dryer rather than paper products whenever possible.

Site Visitors

• All visitors to the site are to be asked to remain a minimum distance of at least 10 meters (33 feet) from all sampling areas.

Rain Events

- The use of waterproof rain gear is not permitted while sampling. Therefore, field sampling will not take place in the presence of persistent rainfall. Field equipment shall be removed from the sampling area during rainfall and can be returned after the rain subsides.
- The use of a waterproof gazebo tent is acceptable for use to provide shelter from the rain if the schedule does not allow for work to stop during rain. The gazebo should be erected directly overtop of the sampling area taking precautions that water running off of the gazebo does not enter into work areas. Since a waterproof gazebo represents a potential for PFAS cross-contamination precautions should be taken when using them. Gloves should be donned whenever contact with the gazebo is made and the gloves should be disposed of immediately following contact.

Equipment

- All sampling equipment components and sample containers should not come in contact with aluminum foil, low density polyethylene (LDPE), glass or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer.
- Acceptable materials for sampling include: stainless steel, high density polyethylene (HDPE), PVC, silicone, acetate and polypropylene.
- Rite in the Rain field notebooks/paper and similar products are not be used. Field records should be recorded on loose uncoated paper.
- Field notes, records, and sample labels should be made in pencil or using Rite in the Rain pens (confirmed to be PFAS-free from the manufacturer). Ballpoint pens and markers are not to be used for notes. Sample labels may also be pre-printed by the laboratory; if pencil is used to write on the sample labels, those bottles will be double bagged using Zip-Lock® brand bags.
- Clipboards should be made of Masonite or aluminum. Plastic clipboards, binders, and spiral bound notebooks are not acceptable.

- Disposable nitrile gloves must be worn at all times. A new set of gloves will be donned prior to conducting any of the following activities at each sample location:
 - Equipment decontamination,
 - Contact with bottleware and/or PFAS free water containers,
 - o Insertion of anything into the well (e.g. samplers, tubing, etc...),
 - Insertion of silicone tubing into peristaltic pump,
 - Completion of well purge, prior to sample collection,
 - Collection/handling of QC/QA samples,
 - Following handling any non-dedicated field equipment, contact with non-decontaminated surfaces, and
 - When deemed necessary by field personnel
- Use PFAS-free water level probe;
- Use PFAS-free electronic oil/water interface probe;
- Use PFAS-free peristaltic pump;
- Use HDPE plastic tubing (appropriately sized for the chosen peristaltic);
- Use HDPE plastic sheeting;

Sampling

- A PFAS sampling checklist is attached and should be filled out daily by field personnel
- Sample bottles for PFAS samples (two pre-cleaned 500 mL HDPE or polypropylene bottles) should be kept separate from other sample bottles.
- PFAS bottleware is kept in transport containers (e.g. PFAS designated cooler) as much as possible and remove only to receive the samples.
- Prior to the start the PFAS sampling, the PFAS filed blank bottle should be opened in the sample collection area (see QA/QC below).
- Samples shall be collected using high density polyethylene (HDPE) tubing. Purging can be
 performed either by fitting the tubing with a check valve and manually pumping or by using a
 peristaltic pump.
- During PFAS sampling, samples are transferred directly to the container. The container should hold
 any necessary preservative and should be correctly labeled before the sample is transferred to it.
 Samples should be collected in the following order:
 - o PFASs
 - SVOCs (PAHs + 1,4-dioxane)
 - VOCs
 - o TPH (sheen net)
 - Metals
- The sample containers will be labeled, placed in a laboratory-supplied cooler (keeping PFAS sample bottles separate from other sample bottles), with protective packaging (i.e., bubble wrap) and packed on ice (to maintain a temperature of 4° C). Do not use ice packs.
- Immediately seal each sample bottle, double bag it using Zip-Lock® brand bags and place the sample bottles on ice in a cooler to maintain sample integrity. Do not allow the samples to freeze, as the bottles may break. When PFAS sampling is complete, close the PFAS filed blank bottle and return it to the PFAS designated cooler. Be sure to change gloves prior to handling the PFAS field blank bottle. Samples must not be allowed to freeze.

QA/QC

- A PFAS field blank should be collected daily during sampling activities. The PFAS field blank is a
 PFAS sample bottle pre-filled at the laboratory and sent with the sample bottles. Open the PFAS
 field blank bottle provided by the analytical laboratory and place adjacent to the sample collection
 area. Gloves should be changed prior to handling the PFAS field blank bottle.
- A PFAS equipment blank (i.e., tubing) should be collected daily from each sample set-up. The
 equipment blank is collected by pouring or pumping PFAS-free water provided by the analytical
 laboratory through sample apparatuses and collecting in appropriate sample bottles. Gloves should
 be changed prior to collecting the equipment blank sample.
- A temperature blank in the appropriate sample bottle (i.e., no Teflon lined caps for PFAS temperature blank bottles) should accompany each cooler.
- Collect one field duplicate for every sample batch, not to exceed 20 samples.
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, not to exceed 20 samples.
- Check that PFAS field blank, and equipment blanks are included in the PFAS designated coolers.

<u>Decontamination</u>

- All groundwater sampling equipment will be dedicated or non-contact in nature. Therefore, no
 groundwater monitoring equipment decontamination procedures are necessary. However, any
 decontamination that is conducted will be as described below.
- Prior to sampling, non-dedicated sampling equipment (e.g., bailers, bowls, certified PFAS-free interface probes, etc.) will be washed with potable water and a PFAS/phosphate-free detergent (Table 1). Decontamination may take place at the sampling location as long as all liquids are contained in pails, buckets, etc. Traditional best practice techniques and procedures shall be subject to modification to prevent the introduction of non-site-derived contaminants including PFASs and 1,4-dioxane into target samples.
- Standard two step decontamination using detergent and clean water rinse will be performed for equipment that come in contact with PFAS materials.

Laboratory Analyses

• The PFAS samples will be analyzed for perfluorooctanoic acid (PFOA) and other perfluorinated compounds by Modified (Low Level) Test Method 537.

Table A1. Summary of Prohibited and Acceptable Items for Sampling of PFAS

PROHIBITED ITEMS	ACCEPTABLE ITEMS					
Field Equipment	NOOLI INDEL II LIIIO					
Teflon® containing materials	High-density polyethylene (HDPE) materials					
Low density polyethylene (LDPE)	Acetate liners					
Aluminum foil	Silicon tubing					
Waterproof field books	Loose paper (non-waterproof)					
Plastic clipboards, binders, or						
spiral hard cover notebooks	Aluminum field clipboards or with Masonite					
Ball point pens	Rite in the Rain pens®					
Post-It Notes						
RE-usable Chemical (blue) ice packs	Regular ice in polyethylene bags (double bagged)					
Field Clothing and Personal Protective Equipment (PPE)						
New cotton clothing or synthetic water resistant, waterproof, or stain- treated clothing, clothing containing Gore-Tex TM	Well-laundered clothing, defined as clothing that has been washed 6 or more times after purchase, made of natural fibers (preferable cotton)					
Clothing laundered using fabric softener	No fabric softener					
Boots containing Gore-Tex [™] Tyvek®	Boots made with polyurethane and polyvinyl chloride (PVC) Cotton Clothing					
No cosmetics, moisturizers, hand cream, or other related products as part of personal cleaning/showering routine on the morning of sampling	Sunscreens - Alba Organics Natural Sunscreen, Yes To Cucumbers, Aubrey Organics, Jason Natural Sun Block, Kiss my face, Baby sunscreens that are "free" or "natural" Insect Repellents - Jason Natural Quit Bugging Me, Repel					
	Lemon Eucalyptus Insect repellant, Herbal Armor, California					
Sample Containers and tubing						
LDPE or glass containers and lined lids	HDPE					
Teflon®-lined caps	Unlined polypropylene caps					
Rain Events						
Waterproof or resistant rain gear	Gazebo tent that is only touched or moved prior to and following sampling activities					
Equipment Decontamination						
Decon 90	Alconox® and/or Liquinox®					
Water from an on-site well Potable water from municipal drinking water supply	PFAS-free deionized water					
Food Considerations						
All food and drink, with exceptions noted on the right	Bottled water and hydration drinks (i.e. Gatorade® and Powerade®) to be brought and consumed only in the staging area					

PFAS Sampling Checklist

Site Name:	Task:					
Weather (temp/precip):	Date:					
Field Clothing and PPE:						
☐ Ansell TNT® Powder-Free Nitrile Gloves ONLY	☐ No Post-It Notes®					
$\hfill\square$ No clothing or boots containing Gore-Tex TM	☐ Coolers filled with regular ice only; no chemical (blue) ice packs in possession					
$\hfill\square$ No clothing or boots treated with water-resistant spray	Sample Containers:					
$\hfill \square$ Safety boots made from polyurethane and PVC or leather boots covered with overboots	☐ Containers for PFAAs Shipped in separate cooler					
☐ No materials containing Tyvek®	\square Sample containers made of HDPE or polypropylene					
$\hfill\Box$ Field crew has not used fabric softener on clothing	\square Caps are unlined and made of HDPE or polypropylene					
$\hfill \square$ Field crew has not used cosmetics, moisturizers, hand	Wet Weather (as applicable):					
cream, or other related products this morning	$\hfill\square$ Wet weather gear made of polyurethane and PVC only					
☐ Field crew has not applied unauthorized sunscreen or insect repellant	Equipment Decontamination:					
☐ Samplers don fresh nitrile gloves for each sample collected	$\ \square$ "PFAA-free" water on-site for decontamination of sample equipment; no other water sources to be used					
Field Equipment:	☐ Alconox® or 7 th Generation Free & Clear Dish Soap to be used as decontamination cleaning agents					
☐ No Teflon® or LDPE containing materials other than QED brand LDPE	Food Considerations:					
☐ All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene or QED brand LDPE	☐ No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade® and Powerade®) that is available for consumption only in the staging area					
☐ No waterproof field books, waterproof paper or waterproof bottle labels, waterproof markers/Sharpies®	Vehicle Considerations:					
□ No plastic clipboards, binders, or spiral hard cover notebooks	$\hfill\square$ Avoid utilizing areas inside vehicle as sample staging areas					
If any applicable boxes cannot be checked, the field team leader shall describe the deviations on the back and work with field personnel to address issues prior to commencement work. See additional information on the back of this form.						
Sampling Equipment and Supply Summary (include brand names and serial numbers where available)						
Decontamination Fluid Source(s):						
Soap and other fluids used:						
Gloves::	Rope:					
Sampling Equipment:						
Field Team Names:						
Field Team Leader Signature:						
-						

Deviation Summary:	
If possible, materials identified as potentially containing PFAAs sho as possible from the sampling location(s) and containerized if prac- including type of materials on site and how they were moved and co	ticable. Notes should include method of response
Field Team Leader Name:	
Field Team Leader Signature:	Time: