

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 1 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

New Mexico Environment Department Surface Water Quality Bureau

Standard Operating Procedure for

Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection

Approval Signatures

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Date

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 2 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

1.0 Purpose and Scope

The purpose of this Standard Operating Procedure (SOP) is to describe the sample collection techniques, preservation requirements, equipment, and quality control activities associated with sampling of per- and polyfluorinated alkyl substances (PFAS) by the New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB). The sampling of PFAS requires careful planning, sampling, and shipping techniques that ensure the integrity of the sample. This SOP provides detailed procedures to reduce cross-contamination sources and provides quality assurance requirements for staff to ensure the collection of valid samples to be analyzed for PFAS analytes.

2.0 Personnel Responsibilities

The Monitoring, Assessment, and Standards Section (MASS) Program Manager coordinates with monitoring staff and the Quality Assurance Officer (QAO) as applicable to ensure quality data is collected, verified, and validated to support program commitments. The Program Manager will provide input on the scope and intent of the Standard Operating Procedure (SOP) as it pertains to the program's goals and objectives.

The QAO is involved in the development and revision of this SOP to ensure the SOP meets the requirements of the most current SWQB's Quality Assurance Project Plan for *Water Quality Management Programs* (NMED/SWQB 2021 or most current). The QAO, along with the MASS Program Manager and staff implementing this SOP, will determine if any revisions to this SOP are needed at a minimum of every two (2) years in accordance with the most current version of SOP 1.1 for the Creation and Maintenance of SOPs. Pending review and approval of the document, the QAO will ensure the SOP is accessible through the SWQB's website.

Personnel who conduct PFAS sampling or those who supervise those who do so must be familiar with this SOP. This SOP is designed to be used for PFAS sampling for surface waters and all sampling activities (i.e., sample collection, preservation, and handling) conducted by personnel utilizing this SOP shall comply with procedures prescribed in this SOP to ensure data results are not invalidated.

Staff whose job duties require utilization of procedure described in this SOP are required to sign the SOP acknowledgment statement associated with NMED SWQB SOP for PFAS sampling, prior to sample collection.

3.0 Background and Precautions

3.1 Background

The PFAS are a general group of several thousand anthropogenic (man-made) substances that have been widely used in industrial and consumer applications since the 1940s. PFAS chemicals includes Perfluorooctanoic Acid (PFOA), Perfluorooctane Sulfonic Acid (PFOS), GenX, and many other chemicals. These synthetic compounds are very persistent in the environment and in the human body – meaning they don't break down and they can accumulate over time. People are exposed to these compounds through food, food packaging, textiles, electronics, personal hygiene products, consumer products, air, soils, and drinking water. Studies indicate that continued exposure to low levels of PFAS may result in

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 3 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

adverse health effects (USEPA 2019).

The collection of surface water samples to be analyzed for PFAS may support future regulatory determinations; support actions to protect public health; and preserve, protect, and improve New Mexico's surface water quality for present and future generations. The analytical methodologies used to assess the presence of PFAS in drinking water are EPA method 533 and EPA method 537.1¹. The NMED SWQB will adopt this procedure for the analysis of PFAS in NM surface waters. Laboratories certified to implement EPA draft method 1633 will also be considered adequate for SWQB objectives and goals.

3.2 Procedural Precautions

Due to the prevalent nature of PFAS in commonly used sampling materials and personal protective equipment, as well as in clothing, food packaging, and personal care products, samplers must implement careful procedures to prevent cross-contamination of a field sample. Recommendations and requirements include the following:

Field Clothing and PPE for Field Sampling:

- Recommend all cotton clothing.
- Minimize the use of synthetic water-resistant or stain-resistant materials (e.g., waterproof clothing and shoes containing Gore-Tex® or similar materials), and Tyvek® material.
- Minimize the use of fabric softener or anti-static sheets on clothing to be worn.
- Recommend non-waterproof boots.
 - Waders made of Neoprene or other PFAS-free materials may be used.
- Minimize the use of personal hygiene and personal care products (PCPs) (e.g., cosmetics, moisturizers, hand cream, or other related products) that contain PFAS the morning of sampling.² The following precautions should be taken when dealing with personal hygiene or PCPs before sampling:
 - Do not handle or apply personal hygiene or PCPs in the sampling area.
 - Do not handle or apply personal hygiene or PCPs while wearing PPE that will be present during sampling.
 - If no other alternative exist and personal hygiene or PCPs must be applied, move to a staging area away from sampling site and remove PPE before applying personal care products.
 - Wash hands thoroughly after the handling or application of PCPs. Prior to resuming sampling, put on a fresh pair of powderless nitrile gloves at sample site.

Field Equipment:

- Must utilize high density polyethylene (HDPE), silicon, polypropylene, or stainless-steel sampling materials.
 - Must not contain Teflon (i.e., polytetrafluoroethylene, PTFE) or low-density polyethylene (LDPE).

¹ <https://www.epa.gov/pfas>

² The Michigan Department of Environmental Quality provides acceptable PCPs in their *PFAS Sampling Quick Reference Field Guide* (2018b).

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 4 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

- Must use PFAS-free writing implements when taking notes, filling in field forms, and Chain of Custody (COC).
 - Must not use waterproof/weatherproof field books, pens, or markers
 - Non-waterproof ball point pens and pencils are acceptable.
- Must not use adhesives (e.g., Post-It® Notes) with the exception of laboratory provided sample identification labels and tamper seal tape (e.g., Uline Tamper Seal).
- Minimize the use or handling of aluminum foil right before sample collection.
- Must not use sealable bags (e.g., Ziploc® plastic bags) other than those provided by Laboratory.
 - Ultra-clean polypropylene or HDPE material sealable bags are allowed³.
- Must not use dry ice, blue ice, or reusable chemical ice.
- Must use powderless nitrile gloves for sample collection.
- If sampling chlorinated water, alert laboratory staff so that sample bottles are preloaded with proper preservative (Trizma® for EPA Method 537.1 and ammonium acetate for EPA Method 533) prior to sample collection.

Other activities and items to avoid:

- Recommend that the vehicle being used for a sampling run be filled with gasoline the day before sampling.
 - If the vehicle used for sampling needs to be filled up in between sampling sites, recommend powderless nitrile gloves be used to avoid contamination.
- Avoid sampling during rain if possible.
 - If necessary, recommend vinyl or PVC rain gear.
- Minimize the handling of pre-packaged food, fast food, or items wrapped in aluminum foil during sample collection events.
 - If must handle, must wash hands after handling items before sampling resumes.
- Must not consume food or beverages during sample collection.
- Must not utilize tobacco of any form during entire sampling run (e.g., smoking, chew, dip).

3.3 Safety Precautions

Like any surface water quality sampling, field teams should take precaution when collecting samples for PFAS and should not wade in a stream if the depth (ft) of the stream times the stream velocity (ft/s) is greater than ten (The “RULE OF 10”). General field work awareness and protocol should be implemented at each location prior to commencement of field work.

4.0 Definitions

For definitions and acronyms not defined in this SOP, refer to the most up to date *SWQB Quality Management Plan for Environmental Data Operations* (NMED/SWQB 2023 or most current).

Accredited laboratory – An accredited laboratory for PFAS will currently be certified to analyze for a suite of analytes in EPA Method 533, EPA Method 537.1, EPA draft Method 1633 or most current versions.

³ SC DHEC QAPP/SOP references Ziploc bag as acceptable (https://gis.dhec.sc.gov/Water_Web_Docs/PFAS/SW_PFAS_QAPP.pdf).

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 5 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

Chain of Custody (COC) – A chronological paper trail that documents who collected, handled, analyzed, or otherwise controlled samples during a sampling run. To uphold the standards and requirements of the law, it is necessary that chain of custody is an unbroken trail without gaps or discrepancies.

Deionized Water (DI) – Water that has been treated to remove all ions prepared in the analytical laboratory using deionized, or distilled water.

Field sample – A sample collected in the field from a water source, identified as a sample site in sampling run.

Field Reagent Blank (FRB) – A field reagent blank or “field blank” is analyzed to assess the potential for PFAS cross-contamination being introduced during the sampling process and consists of a sample bottled filled at the sample site using PFAS-free reagent water provided by the laboratory. The laboratory will provide the field blank sample bottle, the reagent water, and the preservative (if sampling chlorinated water). The field blank must be collected in conjunction with field sample at each site (i.e., each source being sampled). The reagent water used for field blanks is transported, unopened, to the field with other sample containers, handled like environmental samples, and shipped to the laboratory for analysis with the collected field samples.

Pools – Still water, low velocity, smooth, glassy surface, usually deep compared to other parts of the channel

Quality Assurance Officer (QAO) – An individual within the MASS who is responsible for overseeing the development and implementation of all quality assurance procedures and processes within the SWQB, including those projects that receive support or funding from the SWQB.

Reagent Water – Water demonstrated to be free from the analytes of interest and potentially interfering substances at the method detection limit for the analyte; or purified water which does not contain any measurable quantities of any method analytes or interfering compounds greater than 1/3 the MRL for each method analyte of interest (EPA Method 533, 537.1, 1633).

Run or Glide – Water moving slowly, with a smooth, unbroken surface. Relatively shallow and low turbulence.

Riffle – Turbulent, shallow flow; water moving, with small ripples, waves and eddies -- waves not breaking, surface tension not (or barely) broken. Sound: "babbling", "gurgling".

Sampling Run – A grouping of sampling activities that are indicative of a SWQB MASS sampling operation, typically during multi-day collection events that depart and return to the office in a given week (M-F).

Surface Water Quality Information Database (SQUID) – the SWQB database for storing, retrieving, and reporting laboratory results, field observations, biologic assemblage data, LTD data, and stream habitat/geomorphic data.

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 6 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

5.0 Equipment and Tools

Coordinate the sampling run with the accredited laboratory. The laboratory will provide **PFAS-free** sample bottles, bottle labels, sealable plastic bags, sample preservation, quality control samples, ice chest, and shipping instructions.

Provided by Laboratory

- PFAS-free polypropylene or HDPE bottle fitted with a polypropylene or HDPE screw cap (prelabeled by laboratory)
- PFAS-free plastic bags for sealing samples
- Laboratory reagent water for field blank
- Deionized water
- Cooler (e.g., ice chest)

SWQB Equipment and Tools

- PFAS Sampling SOP
- Field forms (electronic and hard copy on non-waterproof paper)
- Powderless nitrile gloves
- PFAS-free ball point pen or pencil (non-waterproof)
- Alconox® or Liqui-Nox® soap (phosphate free)
- Tamper seal tape (e.g., Uline Tamper Seal)
- Wet ice (non-chemical, no blue ice, no dry ice)
- Digital camera
- Waders made of Neoprene or other PFAS-free materials

6.0 Step-by-step Process Description

Currently, staff should coordinate the sampling run with staff from the Organic Section of State Laboratory Division of the New Mexico Department of Health (SLD) (or equivalent) to ensure laboratory can process and analyze samples according to hold times stated in this SOP. Samples must be collected in a PFAS-free polypropylene or HDPE bottle fitted with a polypropylene or HDPE screw cap. Sampling staff should take practical and appropriate precautions to avoid items that are likely to contain PFAS at the sampling site as well as avoid specific items and activities during the sampling event (see Section 3.2 of this SOP).

Sampling personnel must be minimized, and a team of two is recommended. One team member obtains the samples and the other records sample collection information on the appropriate forms (e.g., COC form and field form). The person conducting the sampling must wear powderless nitrile gloves that must be discarded from the transition from dirty hands to clean hands. PFAS sampling run must be dedicated to PFAS sampling to avoid cross-contamination; however, if not possible, PFAS sampling must occur before all other data collection activities at each sampling location. If possible, sampling runs should begin at locations where lower contamination is suspected and progress to locations of higher suspected or known contamination.

6.1 Office Procedures/Preparation (Prior to field work)

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 7 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

An approved Field sampling Plan (FSP) is required prior to sample collection. The field team will become familiarized with sample site location, obtain any special permission required to enter sample site, and will note length of time required to complete sampling run to ensure the sampling run will not exceed sample hold time limitations. The field team will perform the following task before departure for the sampling run and are responsible for:

- Ensuring enough sampling supplies have been provided by laboratory.
 - Note: SWQB recommends requesting extra sample bottles, labels, and sealable bags. Extra supplies should be stored in sealable plastic bag provided by laboratory.
- If possible, pre-label field forms prior to the sampling run with each individual "SAMPLE ID" or sample location.

6.2 PFAS Sample Collection Procedure

Sample Collection Process at Sample Site

Wash hands with prepared Alconox® or Liquinox® soap and deionized water before sampling. Sampling staff should take practical and appropriate precautions to avoid items that are likely to contain PFAS at the sampling site (see Section 3.2). Upon arrival at sample location, the field blank should be processed prior to collection of field sample. The sampler must wear power-free nitrile gloves and "clean hands/dirty hands" must be implemented as follows⁴:

- Upon arrival at the first sampling site, one member of the sampling team is designated as "dirty hands"; a second member is designated as "clean hands."
- All operations involving contact with the sample bottle are handled by the individual designated as "clean hands."
- "Dirty hands" is responsible for all activities that do not involve direct contact with the sample bottle (e.g., completion of field forms).

The individual identified as clean hands should maintain the responsibility throughout the entirety of the sampling run and will be considered the official "sampler" for the sampling run.

Field Blank Procedure

The laboratory prepares the reagent water used for field blank in advance. SLD will provide a "field blank kit" that contains two bottles contained in resealable bag. One bottle will be pre-filled with reagent water, and one bottle will be used for the field blank. SWQB staff should request a field blank kit from SLD for each planned field sample. The field blank must be prepared at the sampling site prior to collection of the field sample as follows:

- Remove the bottles from the resealable bag.
- Loosen the lid of the bottle with reagent water .
- Open the empty bottle.
- Transfer the reagent water from the first bottle into the second and cap the bottle.

⁴ The clean hands/dirty hands procedure described above has been simplified from EPA Method 1669 (EPA 1969).

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4	Page 8 of 14
	Revision 0	
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

- Do not place the bottle cap of the second bottle on any surface, and avoid all contact with the inside of the bottle or its cap.
- Return the bottle filled with reagent water back into the bag and seal.
- The sealed bag containing the field blank sample should be placed in an insulated cooler used for shipment or transport to the lab

The operators are encouraged to return samples as soon as possible to the lab. The samples must arrive at the lab within 14 days of collection.

Field Sample Location

PFAS sampling of surface water should be conducted at locations representative of ambient stream conditions, generally in the transition between a riffle/run and a pool, or at the toe of a pool, rather than in shallow riffles or deep pools. Samples should be taken where the stream is flowing, well mixed, and preferably more than 6 inches deep. Sample in a location that does not allow streambed sediment or water surface materials to enter sample bottle. Sample should be taken as far away from the bank as possible but ensure safety is taken not to slip, trip, or fall.

Sample Collection Procedure

- Wear powderless nitrile gloves while filling and sealing the sample bottles, using a new pair of nitrile gloves at each site.
- Uncap the sample bottle, do not place the bottle cap on any surface when collecting the sample, and avoid all contact with the inside of the sample bottle or its cap.
- Fill sample bottle, taking care not to flush out the sample preservation reagent (if included). Samples do not have to be headspace free but should be filled to the neck of the bottle.
 - Immerse the sample container one foot to six inches beneath the surface of the water (if possible) with the container mouth facing upstream.
 - Sampler (e.g., samplers exposed flesh, boots, clothing, etc.) should be positioned downstream from the opening of the sample bottle to any avoid contamination.
 - When sampling hands should not obstruct flow upstream of sampling container.
- After collecting the sample, cap the bottle and gently agitate by hand until preservative is dissolved (if preservative is present in sample bottle).
- Tightly close the lid on the bottle to ensure no sample water can leak.
- Ensure that the sample bottle is labeled appropriately (i.e., sample ID) and matches the field form (COC may be required dependent of project objectives).
- Place the sample bottle in an individual sealed plastic bag (provided by the laboratory), and then into the ice chest.
- Sample bottle(s) cannot be in direct contact with ice, so for additional quality control place all wet ice in resealable (not containing sample) before adding to ice chest.
 - Note: Do not use dry ice, blue ice, or reusable chemical ice
- Samples should be stored in ice chest at least 1/3 filled with wet ice.
- If possible, have sample bottles remain upright after filled. Keep water drained from ice chest to avoid potential for cross-contamination.
- Samples stored in the cooler should not be touched again by sampling personnel. If necessary, personnel should only handle individually sealed bags.
- Ensure cooler lids are closed before proceeding to next site.
- Remove and discard powderless nitrile gloves after each field sample collection.

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 9 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

6.3 Sample Handling and Shipping Procedure for Laboratory Analysis

Samples should be stored in a cooler according to procedure identified in Section 6.2 above.

- Field sample should be stored in a cooler that is between 6°C (42.8°F) and 0°C (32°F) but not frozen while independently enclosed in their individually sealed bags.
- Samples must arrive at the laboratory at a temperature between 10°C (50°F) and 0°C (32°F) but not frozen within 14 days of sample collection.

Note: The laboratory may need a few days for extraction so plan accordingly. (EPA method 533, 537.1 and EPA draft method 1633)

If delivery to laboratory is not possible, samples should be stored at a temperature between 6°C (42.8°F) and 0°C (32°F) but not frozen. If samples are stored at the SWQB laboratory awaiting delivery, samples should be stored in sealed cooler with tamper seal tape (e.g., Uline Tamper Seal). If samples need to be shipped, staff should follow the shipping procedure described in this SOP, see Sampling Shipping Procedure below.

Sample Shipping Procedure

- Ensure that the bottles cannot move sideways or be turned upside down. Any extra space around the bags should be packed with ice to 1/3 the depth of the ice chest
 - Note: Ice should never be in direct contact with sample containers
- If samples will be shipped to a laboratory, a COC form filled out during sample collection will accompany all samples. The COC form is an integral part of sample quality control.
 - NOTE: The general information in the COC could be filled out in advance of the field sampling.
- Each ice chest should include a separate COC.
- Ensure that the COC is complete and ready to be signed by shipping company personnel prior to sealing the ice chest. Retain the sender's copy.
- Place the COC in a sealed plastic bag (1 gallon) inside of the cooler.
- Seal the ice chest firmly with tamper seal tape (e.g., Uline Tamper Seal), wrapping it around multiple times. The use of Uline Tamper Seal is recommended to secure the ice chest.
- Attach plastic overnight carrier tags to the ice chest's handle, retain the marked sender's copy for the record tracking number.
- Provide the shipping information to the laboratory and communicate the expected time of arrival of the samples.

Samples not delivered to laboratory in person may be shipped to SLD's address identified below, however the preferred method of delivery is drop off. Staff will need to coordinate with the Organics Section of SLD prior to shipping samples. If another laboratory will be used, staff will need to coordinate with proper laboratory staff to ensure delivery to proper location.

Scientific Laboratory Division
Attention: Specimen Receiving

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 10 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

**1101 Camino de Salud NE
Albuquerque NM 87102
Telephone: Michael Trujillo, 505-383-9030**

6.4 Laboratory Sample Analysis

SWQB samples analyzed for PFAS must be analyzed at an accredited laboratory (for PFAS) certified to analyze a suite of analytes for either EPA method 533, EPA method 537.1, or EPA draft method 1633 (or equivalent). A list of analytes for each EPA method conducted by SLD can be found in SLD PFAS analyte list, available as a related form to this SOP.

- Laboratory will store samples between 10°C (50°F) and 0°C (32°F) but not frozen.
- Laboratory extraction should be as soon as possible but must be extracted within 14 days and analyzed within 28 days.
- Trizma® preservative (contained in sample bottles provided by laboratory) for analysis of PFAS by EPA method 537.1 is required if field sample is suspected to contain chlorine.
- Ammonium acetate preservative (contained in sample bottles provided by laboratory) for analysis of PFAS by EPA method 533 is required if field sample is suspected to contain chlorine.
- No preservative is required for analysis of PFAS by EPA method 1633.

For more information regarding PFAS analyses, please visit: <https://www.epa.gov/water-research/pfas-analytical-methods-development-and-sampling-research>.

PFAS reporting to the SWQB must be through an electronic data transfer process and will include reported results in a pdf report (if requested), as well as an electronic data deliverable. The laboratory will report sample identification number, PFAS compound result, method detection limit, method reporting limits, and sample detection limit for each sample. PFAS data results will be uploaded into SQUID by the QAO. Results awaiting upload will be stored in a secured location within the SWQB network drive.

7.0 Data and Records Management

SWQB fills out a Stream and River Field Data Form at every sample station to document all information obtained during the sampling event. A COC form may also be needed dependent on project objectives and contract laboratory requirements. The Stream and River Field Data Form is then published and filed in the SWQB project folder after data collection is complete and Project Manager has verified information is accurate on form. Information collected at sampling station and recorded on Stream and River Field Data Form are then upload into SQUID. Refer to section below regarding SQUID upload instructions.

When entering data into the SQUID, it is important to select the correct blank type from the list appearing in the drop-down menu.

7.1 Uploading PFAS Sampling Event into Squid

To upload PFAS sampling event information for a sample station, either upload the data manually or use the macro-enabled Excel spreadsheet.

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 11 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

7.1.2 Upload PFAS Sampling Event Into SQUID Using Macro-enabled SLD Submittal Form

- Locate the most recent version of the macro-enabled SLD Submittal Form (available on the SWQB SOP website).
- Insert the correct survey name and year, user code for the survey (listed in the “lists” tab) and the collectors contact information as well as the date and approximate time of laboratory submittal.
- Make sure that all chemical sampling event data sheets for the sampling run are complete and published.
- In the SLD Submittal form instructions tab select “Select Files” and navigate to the project folder containing the published final drafts of the chemical sampling (Stream/River Field Data Form). Select all applicable chemical sampling events and flow events for upload.
- In the SLD Submittal form instructions tab select “create submittals.” The resulting submittals in the chemical suite tabs are the forms that are submitted to SLD when chemical samples are delivered for analysis. Each chemical suite sheet should contain the sample RID and a corresponding barcode (requires special computer software listed on the instructions tab), the collection date and time, the conductivity, and all appropriate header information.
- After sample RIDs are confirmed and successfully submitted to the laboratory for analysis, proceed with the chemical sampling event data upload in SQUID.
- Ensure that all data is complete and create a .csv file from the combined data tab in the SLD Submittal form.
- In SQUID, select the “data management” tab at the upper left corner of the database, and select “imports” from the drop-down menu. In the “imports” sub-menu select “sampling event data.”
- The Import Sampling Event Data page should open. Select the applicable project from the project field menu, and then select “choose file.” Navigate to the .csv version of the sampling event data and then select “open.” In SQUID, select “upload file.”
- Ensure that there are no invalid records found with error messages. Error messages will appear as a red exclamation point in the “valid” column along with the message “X invalid records found.” Correct errors if invalid records are found. Once there are no invalid records, select “import all valid records.” A notification that upload was successful should appear.
- Navigate to the project folder and select a station to ensure that the sampling events were successfully uploaded.

7.1.3. Upload PFAS Sampling Event Manually to SQUID

- Navigate to the applicable project folder in SQUID by selecting the “project” tab on the navigation bar, then selecting the appropriate folder icon with a green arrow under the “View/Add Monitoring Locations” column.
- All stations that have been added to the selected project folder should appear. To upload a chemical sampling event to a particular station, select the folder icon with a green arrow under the “sampling events” column for that particular sampling station.
- In the Sampling Events page, select “add a new sampling event” in the top navigational bar. Select a sampling event type from the drop-down menu. For River/Stream chemical

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 12 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

sampling event data select “RIVER/STREAM-CHEMICAL.” Select the “add new sampling event.”

- A sampling event details box will appear. Populate the fields in the general tab with the appropriate data.
- In the RIDS tab, enter the number of RIDs associated with that station. Enter the RID and select each corresponding Analyte Suite from the drop-down menu.
- In the Field Measurements tab enter all sonde data that was collected at the time of sampling. Indicate a flow condition rating associated with the event. This rating should correspond to the rating from the flow section of the Stream/River Field Data Form.
**Note: that a flow event will not be created when chemical sampling events are manually uploaded and will have to be created for the station separately
- Select “save.” The chemical sampling event and associated RIDs should appear under the sampling events.
- Navigate to the project folder and select a station to ensure that the sampling events were successfully uploaded.

7.2 Upload of Chemical Analytical Results

The QAO uploads all chemical results which include PFAS data. See QAO for additional details regarding data upload procedure for PFAS.

8.0 Quality Control and Quality Assurance

For PFAS sampling, the SWQB requires a field blank (FRB) for every field sample (source sample) collected. The quality control procedure must be discussed with the laboratory to ensure proper sample containers and quality control reagents are on hand for the field sampling event. Table 2 summarizes minimum requirements for PFAS sampling:

Table 2. PFAS Sample Summary Information

Parameter	Minimum Requirements
Sample volume	2-4 250 mL (dependent on laboratory)
Container/cap	Polypropylene bottle/screw cap or HDPE bottle/screw cap (provided by Laboratory)
Sample preservation	-Trizma® for EPA Method 537.1; and -Ammonium acetate for EPA Method 533 -No preservative is required for non-chlorinated water -No preservative required for EPA draft Method 1633
Field Blank	One per sample site
Sample Collection Holding Time	Needs to be processed and extracted by laboratory within 14 days
Temperature	
- Sample stored for analysis	≤ 6°C (42.8°F) after 48hours, but not frozen
- Upon receiving at laboratory	≤ 10°C (50°F) but not frozen
Laboratory Holding Time	
- Extraction	Within 14 days of collection
- Analyses	Within 28 days of extraction

Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 13 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

The SWQB ensures quality controls for PFAS sampling by using standardized methods documented in this SOP. All personnel who collect PFAS samples must be familiar with these protocols, sign the acknowledgment form associated with this specific SOP, and collect sample in accordance with the procedures defined in this SOP. If, at any time, the QAO determines this process is not being adhered to, the QAO has the authority to cease activities specific to this SOP with prior support and approval by the SWQB Bureau Chief and MASS Program Manager, until such a time that the issue can be resolved.

9.0 Related Forms

Stream and River Field Data Form
COC forms
SLD PFAS Analyte List
SLD UCMR 5 PFAS 533 Collection Instructions
SLD UCMR 5 PFAS 537.1 Collection Instructions

10.0 Revision History

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Miguel Montoya, QAO; Lynette Guevara, Program Manager MASS

11.0 References

Michigan Department of Environmental Quality. 2018. General PFAS Sampling Guidance. https://www.michigan.gov/documents/pfasresponse/General_PFAS_Sampling_Guidance_634597_7.pdf

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Title: Per- and Polyfluoroalkyl Substances (PFAS) Sample Collection	No: SOP 8.4 Revision 0	Page 14 of 14
Effective Date: 6/21/2023	Next Revision Date: 6/21/2025	

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