

UCD CSN Standard Operating Procedure #903

Sample Tracking and Storage

*Chemical Speciation Network
Air Quality Research Center
University of California, Davis*

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1. PURPOSE AND APPLICABILITY

This standard operating procedure (SOP) describes the procedure for tracking and storage of samples (PTFE and quartz filters) analyzed as part of the EPA Chemical Speciation Network (CSN) contract.

2. SUMMARY OF THE METHOD

Filter samples collected for the CSN are stored under specific conditions. This method describes the documentation and sample handling practices necessary to maintain sample integrity.

3. DEFINITIONS

- **Chemical Speciation Network (CSN):** EPA's PM_{2.5} sampling network, with sites located primarily in urban areas.

4. HEALTH AND SAFETY WARNINGS

Not applicable.

5. CAUTIONS

Not applicable.

6. INTERFERENCES

Not applicable.

7. PERSONNEL QUALIFICATIONS, DUTIES, AND TRAINING

The Air Quality Research Center (AQRC) laboratory staff assigned to this project have been trained on this SOP.

8. FILTER TRACKING

CSN filters are shipped to UC Davis from the CSN Sample Handling Laboratory (Wood PLC) with a Chain of Custody (COC; Figure 1). There are separate COC documents for each filter type; UC Davis currently receives PTFE and quartz sampled filters. An electronic copy of each COC is also available. This document lists an itemized inventory including number of samples, filter type, analysis requested, and status (invalid or valid). The COC is utilized to perform filter inventory upon receipt by UC Davis. Following inventory, the COC stays with the filters as they move to different laboratories for analysis. For further information regarding COCs refer to *CSN TI 302B: Receiving and Inventorying*, *CSN TI 302C: Sample Change*, and *CSN TI 277A: Optical Analysis*. Following completion of analyses, COC forms are archived.

Figure 1. CSN Chain of Custody (COC) form.


CSN Laboratory Chain of Custody Form

Ship Date and Name:












Receive Date and Name:

Analysis Request ID:

Intended Sample Date:

Barcode/Filter Analysis ID:  Set #

Δ0000063

Barcode/Filter Analysis ID	Filter Type	Analysis Requested	Invalid?
Filter Analysis ID  F185715	Teflon 220812071	XRF	<input type="checkbox"/>
Filter Analysis ID  F185718	Teflon 220812072	XRF	<input type="checkbox"/>
Filter Analysis ID  F185721	Teflon 220812073	XRF	<input type="checkbox"/>
Filter Analysis ID  F185724	Teflon 220812074	XRF	<input type="checkbox"/>
Filter Analysis ID  F185727	Teflon 220812075	XRF	<input type="checkbox"/>
Filter Analysis ID  F185730	Teflon 220812076	XRF	<input type="checkbox"/>
Filter Analysis ID  F185733	Teflon 220812077	XRF	<input type="checkbox"/>
Filter Analysis ID  F185736	Teflon 220812078	XRF	<input type="checkbox"/>
Filter Analysis ID  F185739	Teflon 220812079	XRF	<input type="checkbox"/>
Filter Analysis ID  F185742	Teflon 220812080	XRF	<input type="checkbox"/>
Filter Analysis ID  F185745	Teflon 220812081	XRF	<input type="checkbox"/>

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When samples are removed from refrigeration and transported between AQRC laboratories, the filters are placed back into cold storage upon receipt. Prior to analysis filters are removed from refrigeration and allowed to reach room temperature. Following analysis, filters are returned to refrigeration. Filters remain refrigerated until prepared for cold storage archive; see Figure 3 for a flowchart of CSN sample movement at AQRC from receipt to archiving.

When preparing filters for archive, zippered bags containing Petri trays with filters are placed in plastic bins. Icepacks are temporarily placed inside the archive bins during transportation to archive storage at the UC Davis Buckeye Cottage or UC Davis Sprocket facilities. The temperature at UC Davis Buckeye Cottage and UC Davis Sprocket cold storage facilities is maintained between 0-4 °C and monitored via a remote alarm system. If the archive cold storage exceeds the specified temperature range, an email alert is sent to the Laboratory Group Manager, Program Manager, and designated Laboratory Technician, and a maintenance technician is dispatched to investigate and resolve the event that triggered the alarm.

For further details regarding filter archive storage refer to *CSN SOP 901: Long-Term Archiving of Filters*.

Figure 3. Flowchart of CSN sample movement at AQRC from receipt to archiving.

