

TI 276A Preparation of Filters for HIPS Analysis

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1. PURPOSE AND APPLICABILITY

This SOP describes the procedure used for preparing filters for HIPS analysis. All routine, valid IMPROVE "A" module filters are prepared for HIPS analysis using the described method.

2. SUMMARY OF METHOD

All valid, routine IMPROVE "A" module filters are transferred from Petri dishes or similar containers to 2"x2" slide frames. Slides are stored in trays that house 40 filters (typically ten filters from four sites each tray). Slides are organized alphabetically by site and chronologically by sampling month and year.

3. CAUTIONS

Many site codes are similar. Ensure that the identifying information on the container matches the information on the slide before transferring the filter to the slide.

Make sure that the filter is placed in the slide so that the sampled side of the filter is facing away from the labeled slide piece.

Note any mishaps that occur while transferring the filters (such as dropping a filter) on a status adjustment sheet.

Be sure that the slide is secured tightly after the filter is transferred.

Make sure that the filters being prepared for HIPS analysis have already been weighed and have undergone XRF analysis.

4. EQUIPMENT AND SUPPLIES

- Slide trays containing labeled slides organized by month and site
- Forceps with ceramic tips
- Slide block
- Slide press
- Slide labels
- 2x2 Slides

5. PROCEDURE

Filters that are ready for HIPS analysis are in labeled Petri trays that are typically stored in one of the XRF rooms (Lab 120A or Lab 120B) or in the gravimetric laboratory (Lab 112).

The stations for transferring filters from Petri dishes to their slide trays is located in Lab 112 or Mezz 207. All pertinent equipment and supplies (pre-labeled slide trays, slide blocks, etc.) for transferring filters from Petri dishes to slides are at these stations.

The order that filters are transferred to slides is not important, but it is preferred to start from the lowest set number, with the lowest tray number. Place the Petri trays on the counter. Open the first Petri tray. Set the enclosed tray check list aside. For reference, this is the inventory list for all filters in the Petri tray and the order in which they are organized in the tray.

Select the first Petri dish from the number one position (IDX#1 on the tray check list). Note the enclosed sample's site and sampling date (SITE and SAMDAT on the tray check list). The information is listed on the label on top of the Petri dish. Ensure that the information on the label matches the information on the tray check list.

Locate the corresponding slide in the proper slide tray. Each slide tray is organized by sampling month, then by site in alphabetical order. There are slides for four sites in each tray. Typically, each site will have ten slides in the tray; for shorter months with fewer sampling dates there may be nine slides per site and for longer months with more sampling dates there may be eleven slides per site. Note that for sampling months with eleven sample dates, samples from the eleventh sampling date are placed in a separate tray and are organized alphabetically.

Be cautious when locating the proper slide. Many IMPROVE site codes are similar, so it is important to make sure that the filter is transferred to the correct slide.

Mount the slide on the slide block, label-side down. Open the Petri dish and pick up the filter using ceramic-tipped forceps. Center the Teflon® filter, sample-side faced up, on the slide. Now, place an unlabeled slide frame on top to sandwich the filter and snap it into place.

With the sample-side of the filter still facing up, pick up the slide by the edges and place it in the slide press. There is a recessed square to accommodate the slide. Rotate the arm to lower the press. Press the slides so that they secure tightly, but use as little force as possible to do so.

Again, handling the slides by the edges, remove the slide from the press and place it back into its original position in the slide tray. The empty Petri dish can be placed in the open two rows of the Petri tray lid.

Repeat these steps for each filter in the tray. Handle only one filter, Petri dish, and slide at a time. If selecting a different slide tray, close the previous slide tray and return it to its original location on a shelf in the hutch before removing the next slide tray.

When the tray is complete, all fifty empty Petri dishes should fill up the Petri tray's lid. Transfer the empty Petri dishes back into the tray's bottom half, close it, and store it with any other empty Petri trays in a box for later cleaning and reuse.

5.1 Field Blanks

About 40 samples of each month will have field blanks assigned. Field blanks can be identified by a Petri label with a designation of "FB-A" along with site and sample date. These

field blanks are placed in a separate pre-labeled tray grouped by the month and year of the sample. Match field blanks to their corresponding slides and mount them as described previously. Place them in their correct positions in the slide tray.