

SOP: Eaton Fire Test Analyses

This Standard Operating Procedure (SOP) document defines a procedure for extracting data from redacted test reports and compiling them into a spreadsheet. The purpose is to ensure consistent formatting and data expression across the team of data entry volunteers. This document focuses on pre-remediation reports (in-home contaminant testing before any cleaning).

Any new data entry volunteers should first review this document before scheduling a one-on-one session with a senior analyst to review its contents and conduct guided data extraction.

In general, if you have questions or would like a second opinion, **please reach out to a senior data analyst** to ensure consistency across the dataset.

Data Entry Procedures

All extracted data should be entered in the shared Excel document. Here are some tips to help you orient yourself to that file.

Tabs in Test Result File

New reports that are ready for analysis are found in the "DATA ENTRY - PRE_INT" tab. After extracting data from an individual report (procedure described below) and the verification step is complete, move the completed row to the "DATA_PRE_INT" tab, where it will be marked for inclusion in the online map.

Row 1: Column Headers

This row is not linked and is editable. These cells include SOP guides and should not be edited unless confirmed with the senior data analysts first.

Avoid Adding New Rows

Rows and their IDs are managed by a senior data coordinator. All tests available for processing will be represented by a row containing the test's ID number.

Rows Without ID Numbers

The sheet may include rows with no ID# or data, but that do have the dropdown list in the **Peak Lead Level Category [ug/ft²]** column. Do not edit these rows or change the data in the dropdowns. These are necessary to ensure the color key is ordered correctly on the map legend.

Survey and Other Non-editable Columns

The leftmost purple columns (Test ID #, Location, Proximity to Nearest Burned Structure, etc.) are either survey answers or entered directly during the initial redaction and data ingestion. They should not be edited.

Standardization

Contaminant Concentrations

All contaminant concentrations should be expressed in micrograms per square foot ($\mu\text{g}/\text{ft}^2$). The only exceptions are ash/soot/char and asbestos, which are reported in a large variety of ways depending on the testing company. Testing companies typically report results in $\mu\text{g}/\text{ft}^2$ or $\mu\text{g}/100\text{ cm}^2$. If the latter, a conversion is needed (e.g., multiply by 9.2903 to convert $\mu\text{g}/100\text{ cm}^2$ to $\mu\text{g}/\text{ft}^2$). In some cases, concentrations are reported as ug/wipe (referring to the wipe used to collect samples). On occasion, the swabbed area will be denoted on the chain of custody. Typically, you can assume the tester swabbed 1 ft^2 , meaning the measurement is in the correct units. However, note this in the “Unit Conversion Notes” column.

Note that there may be a mix of ug and μg in the data document (both denoting a millionth of a gram). This is a known limitation that will be addressed in a future update.

Locations

The location of each sample is a key piece of information that we standardize to aid in aligning with EPA results. When identifying and entering locations that were listed as positive detections, make sure they conform to one of the following:

- **Attic** - All attic samples, regardless of their exact description/location, should use this label.
- **Interior Floor(s)** - floors, doorway, entryway, etc. (pluralize if multiple). Do not include the specific sample if it says “exterior” anywhere in the description.
- **Interior Windowsill(s)** - May be described in multiple ways: windowsill, sill, WS, WF, window, etc. (pluralize if multiple). Ignore samples from window tracks/troughs, as these are considered exterior surfaces.
- **Interior Hard Surface(s)** - any hard interior surface that doesn’t fall into the above categories, including if the interior location was not specified. Pluralize if multiple.
- **Garage Floor(s)** - floors, doorway, entryway, etc., in garage. (pluralize if multiple)
- **Garage Hard Surface(s)** - any garage interior that doesn’t fall into the above categories, including if the interior location was not specified.
- **HVAC** - This is a somewhat non-standard location, so all HVAC or air vent samples, regardless of their description or exact location, should use this label.

Alphabetical Order

When listing locations, please alphabetize the list, moving from the *Attic* to the *Interior of the Home* to the *Garage*, and finally the *HVAC* system (not all will be tested in all cases). This means that locations **should follow the ordering as above, where tests are available**.

Multiple Locations vs. Singular Locations

For ash/soot/char and lead, all locations with detections should be listed, separated by commas, as instructed in the column headers. The peak lead level and location should also be entered separately in the appropriate columns. For other CAM-17 metals (besides lead, the rightmost columns), only the location associated with the peak amount should be entered.

Peak Contaminant Location

Since the peak location is singular, please list the location singularly, even if the location category was pluralized for the full list of locations.

Locations to Exclude

Generally, **do not** include any tests from soft surfaces (such as clothing or fabric) or air samples, as these are not considered valid sampling techniques for assessing wildfire-caused contamination (for the purposes of this dataset). Consequently, any results are difficult or impossible to compare against established limits. We also presently **do not** report on results obtained from soil samples.

Solid asbestos samples (such as from drywall, stucco, or paint) are also **not** included as these tests measure asbestos within building materials and do not specifically indicate contamination from wildfire deposited asbestos.

Use the “Extra Notes” column to indicate that samples were excluded. If you have any questions about this, please contact a senior data analyst.

Consistent Location/Amounts

Please ensure that expressions of data follow existing patterns. Here are some potential inconsistencies to avoid:

- **Windowsills** is consistent; **Window Sills** is inconsistent
- **Interior Floor** is consistent; **Interior, Floor** is inconsistent
- **ug/ft²** is consistent; **ug/ft2** is inconsistent

Asbestos Testing

For asbestos, the type of test used to analyze samples is important, so we note it: certain types are appropriate for dust analysis, while others are more suited to analysis of a physical specimen (e.g., asbestos-containing insulation on ducting).

Typically, the test will either be a “TEM” or “PLM” test, and this should be included in the Asbestos column. If unreported, assume PLM. Some “PCM” tests were also done, which are tests for asbestos within the air; we did not report those results (see above, Locations to Exclude) but note if the test was done.

Different units can be used to report results, with the most common being either a number of structures detected in the sample (“structures”) or a density (typically, “s/cm²”). When reported, both of these units are given, with the format shown under Case 2 in Consistency Guidelines. The type of detected asbestos is also included, if reported.

Consistency Guidelines

The below cases are reminders for how to ensure consistency for some of the more common data entry errors.

Case #1 - Capitalization in Data Cells

To ensure consistency in the map legend, please use Title Case when filling in any data cells. This means that we should always see:

- Not Detected
- Not Tested
- Interior Hard Surface

Avoid entries like:

- Not detected
- not tested
- Interior hard Surface

Case #2 - When a Contaminant is “DETECTED”

Whenever indicating that a contaminant is detected, it needs to be in ALL CAPS

- DETECTED
- If additional information is to be included, use this order following a colon
DETECTED: amount (location, detection method for Asbestos *only*)
- For example: under Asbestos “DETECTED: 1 structure Chrysotile (<2,604 S/cm², Interior Floor, TEM), under Antimony “DETECTED: 15 ug/ft² (Garage Hard Surface)”

There is one exception to this rule: in the ASH, CHAR, or SOOT columns, the report sometimes lists the contaminant as 'Detected' instead of the actual amount detected. In this case, please use Title Case.

Case #3 - When Results are “less than” <

Some test results come back with readings “less than.” The symbol “less than” (<) is often followed by an industry cutoff point, which varies by test type. This should be represented as “Not Detected” in the data cell. However, there is an exception with asbestos; there may be

times when asbestos is detected, but the struc/cm² is reported as <X. For those scenarios, enter the value as <X struc/cm².

Case #4 - Numeric format

To facilitate analysis by future researchers and their programming scripts, don't use commas (1238 µg/ft² instead of 1,238 µg/ft²) and include leading zeros (0.225 µg/ft² instead of .225 µg/ft²). Unless a very large whole number is provided in a report, cut off values at 4 or fewer significant figures (e.g., 387.6 vs 387.55).

Case #5 - Data Entry Questions or Comments

There are often times you will want to flag a potential issue or identify cells that need follow-up by senior data entry experts. Put those comments in the leftmost "SOP Notes" or rightmost "Extra Notes" columns, or color the cell red. Don't place comments/notes inside **data cells**, as this can disrupt the automated process that extracts numerical values and inserts them into the map.