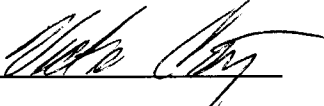
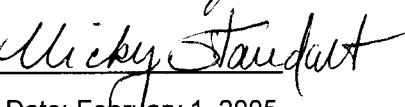


Numerical Formatting and Handling

Chapter 9: DOCUMENTATION

AHETF-9.C.3

Effective Date : April 30, 2006

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1.0 PURPOSE AND SCOPE

- 1.1 This Standard Operating Procedure (SOP) describes how numerical data generated on an Agricultural Handlers Exposure Task Force (AHETF) study shall be handled during calculation and in formatted reports.
- 1.2 The SOP will set forth specific requirements for rounding and fixed decimal places.
- 1.3 The requirements set forth in this SOP are designed to maintain consistency for reporting purposes, recognizing that numbers with greater precision are sometimes used in the calculations.
- 1.4 A new section 2.0 was added to define AHETF LOD and LOQ preferences. Subsequent sections were renumbered accordingly. The previous section 2.0 was revised to clarify analytical data reporting requirements. Section 3.0 was revised so that reported raw numbers will be formatted following AHETF policy.

2.0 DEFINITIONS OF LOD AND LOQ

- 2.1 The Limit of Quantitation (LOQ) for all AHETF studies is defined as the lowest injected standard or lab fortification used in a study sample analysis. These are for reporting laboratory results to the AHETF.

- 2.2 The Limit of Detection (LOD) for all AHETF studies is 0.3 times the defined LOQ in section 2.1. *For example, if the lowest standard/fortification is 1.0 µg for the LOQ, then the LOD will be $1.0 \times 0.3 = 0.3$ µg.*
- 2.3 If a sample result is greater than the LOD, but less than the LOQ, the number shall be reported in the analytical data as the value obtained from the instrument, or if the result is less than the LOD, it shall be reported as less than the numerical value of the LOD, as such: “<0.30 µg”. Report values to two (2) digits beyond the LOQ value unless otherwise specified by the AHETF.

3.0 ANALYTICAL DATA AND CONTRACTOR REPORTS

- 3.1 All analytical laboratory calculations will be performed using only **unrounded** numbers (*i.e.*, as generated by the instrumentation), but no more than four decimal places. These include, but are not limited to: means, standard deviations, *etc.* All results must be reported to the AHETF. Calculated values should be presented as described in section 5.0 of this SOP.
- 3.2 All sample and QC results reported in the summary tables and appendices found in the Analytical Report will be reported to the same accuracy and precision as the final results found in the raw data spreadsheets for these samples. Data should be reported to no more than four decimal places, unless otherwise specified by the AHETF (Study Director or Analytical Monitor).

4.0 FIELD DATA AND CONTRACTOR REPORTS

- 4.1 Raw data will generally be collected to the precision of the equipment or measuring devices. All field calculations with field sample data will be performed using the values provided by the laboratory (*i.e.*, as generated by the instrumentation), and these values will be reported to no more than four decimal places when presented to the AHETF in tables or spreadsheets, unless otherwise specified by the AHETF Study Director. Do not perform calculations on numbers that have been rounded further than those reported by the laboratory. All results must be reported to the AHETF.

5.0 AHETF SUMMARY REPORTS

- 5.1 All calculations will be made using the reported values from the analytical and field reports.
- 5.2 Dermal dosimeters, Face/Neck Wipes, Hand Washes:
- a. In the study summary report, round and report all raw or adjusted whole-body dosimeter residues, dermal patch residues, body area exposures extrapolated from patch residues, face/neck wipe residues, and hand-wash residues as follows:
 - Values ≥ 100 , round and report as a whole number
 - Values < 100 , but ≥ 1 , round and report to one decimal place; and
 - Values < 1 , round and report no more than two digits past the LOQ as defined in section 2.3.
 - b. In specific situations when the data do not conform to these conditions, the Study Director will decide the proper format.
- 5.3 Air Sampling Media:
- a. In the study summary report, round and report raw or adjusted air sampling media residues as follows:
 - Values ≥ 1 , round and report as one or two decimals, depending on the order of magnitude, at the Study Director's discretion.
 - Values < 1 , round and report no more than two digits past the LOQ as defined in section 2.3.
 - b. In specific situations when the data do not conform to these conditions, the Study Director will decide the proper format.
 - c. Total airflow is calculated as the average flow rate (expressed as L/min) multiplied by the duration in minutes. Air concentration is calculated as the residue value divided by the total airflow value. Either rounded or un-rounded values may be used for these calculations.

5.4 Adjustments for Recoveries:

- a. Analytical field sample data (as reported in the analytical report) will be adjusted for representative field fortification mean recoveries; *i.e.*, percent recovery for that matrix and residue level (rounded to one decimal place, following standard rounding rules).
- b. Data that are less than the Limit of Quantitation (LOQ) will be given a value equal to $\frac{1}{2}$ LOQ, by default, and no further adjustment will be made for percent recovery.
- c. The value ($\frac{1}{2}$ LOQ value) will be expressed to the same number of decimal places as specified in sections 5.2.a, 5.3.a, 5.4.a, and 2.3. All non-detects or " $\frac{1}{2}$ LOQ" values will be referenced with a footnote in tabular presentations.

5.5 Means and Standard Deviations:

- a. Means and standard deviations will be calculated from rounded values and expressed to the same number of decimal places as specified in sections 5.2.a, 5.3.a, 5.4.a, and 2.3.