A. PURPOSE:

To define the method(s) in which the instruments in the Trace Section will be calibrated.

B. RESPONSIBILITY:

Trace Section Forensic Science Examiner

and/or their designee

and/or a representative from the vendor / manufacturer of the instrument

C. DEFINITIONS:

FT-IR - Fourier Transform Infrared Spectrometer
NIST - National Institute of Standards and Technologies

D. Procedure:

FTIR

1. An FT-IR located in the Trace Section of the Forensic Science Laboratory will demonstrate that it is in control for casework. This process may be referenced as "Calibration" The manufacturer of the instrument may use various other words to describe this process. These terms include "Verification" and "Validation".

   **A NIST traceable reference standard will be utilized and the instrument will show that it is in control for case work. The method for this process is one which is recommended by the manufacturer. See instrument manual. Reference material will be recertified by the manufacturer of the instrument.

   **A copy of this documentation will be stored with the instrument in the Trace Section. This process will be conducted prior to use for case work (on the same day) according to the method recommended by the manufacturer. A copy of this documentation will be stored with the instrument in the Trace Section.

   **This process (calibration) will be completed on a monthly basis at a minimum. It may additionally be performed at the examiners discretion.

   ** The Examiner will place a check mark in a designated box located on the Physical Evidence worksheet that confirms the calibrations check has been completed. If samples are run over multiple days the calibration will be run once each day. The log book will be referenced to list the dates of calibration.

Microspectrophotometer

2. The Microspectrophotometer located in the Trace Section of the Forensic Science Laboratory will demonstrate that it is in control for casework. This process may be referenced as "Calibration". The manufacturer of the instrument may use various other words to describe this process. These terms include "Verification" and "Validation".

   **This process (calibration) will be completed on a monthly basis at a minimum. It may additionally be performed at the examiners discretion. Also, this process will be conducted prior to use for case work (on the same day) according to the method recommended by the manufacturer.

   **A set of NIST traceable reference standard will be used. The method for this process is one which is recommended by the manufacturer. See instrument manual. Reference material will be recertified by the manufacturer of the instrument.

   **A copy of this documentation will be stored with the instrument in the Trace Section.

   **The Examiner will place a check mark in a designated box located on the Physical Evidence worksheet that confirms the calibrations check has been completed.

The Following is applicable to all instruments

3. The manufacturer provided "User's Manual" will be kept next to the instrument for reference.

4. The examiner will refer to the manufacturer's user manual for instrument operating and maintenance instructions.

5. The examiners or their designee will consult with the manufacturers of a reference material as to the proper handling, use and storage of a reference standard on a case by case basis. The *User's Guide* for the instrument will be consulted; additionally, the technical specialist who represents the manufacturer of the reference material may be consulted.

6. Every effort will be made to ensure the safe handling, transport, storage and use of reference standards in order to prevent contamination and deterioration and to protect integrity.

7. Upon receipt of a reference or calibration item, the items will be inspected, if abnormalities are identified or a question of suitability arises, the issue will be recorded. The examiner or their designee will consult the supplier. The item will not be used. Additionally, the Laboratory shall

consult the supplier of the item and record the discussion. Every effort will be made to correct the issue.

8. If environmental conditions are such that the optimum performance of the instrument is in question, examinations will be suspended.

9. If the instrument is determined to be not in calibration the manufacturer will be notified and request for service will be made. The instrument will be labeled as "Not in Service" until it is deemed calibrated / "back in good service" by the manufacturer or their designee.

10. Similar scan parameters will be used for reference and sample scans.

11. Parameters for the testing are recorded within the saved data file on the instrument.

12. All data acquisition parameters shall be based on the type and nature of the evidence submitted for examination.

13. All equipment used for tests and or calibrations shall be calibrated before being put into service.

14. Test and calibration equipment, including both hardware and software, shall be safeguarded from adjustments, which would invalidate the test and / or calibration results. The manufacturer software (FTIR and Microspec) safeguard this issue.

15. If an instrument is determined to be out of calibration, the examiner will go back to the last "good calibration" and review this data for accuracy.

16. If an instrument is shut down for a prolonged period of time, the instrument will be recalibrated prior to use.