8 Trace Collection

8.1 Scope

This procedure may be used when necessary for the preservation of trace evidence prior to forensic biology analysis. Examples of typical trace evidence in criminal cases include fingerprints, glove prints, hairs, cosmetics, plant fibers, mineral fibers, synthetic fibers, glass, paint chips, soils, botanical materials, gunshot residue, explosives residue, and volatile hydrocarbons (arson evidence). However, the reporting of trace may be limited to apparent hairs and fibers.

The Locard Exchange Principle presumes that when a person comes into contact with an object or person, a cross-transfer of material, sometimes trace evidence, occurs. While this laboratory does not currently examine trace evidence, it does make every effort to collect and preserve it for potential future analysis. To do so, trace evidence is generally collected prior to the commencement of biological analysis.

Dedicated trace collection room doors should remain closed at all times. The rooms will be vacuumed and the floors damp mopped at least once per week when in use. Lab coats will be provided in the trace rooms for analysis. Lab coats used in other areas of the laboratory will not be taken into the trace rooms due to possible contamination. For any method used, tables and tools will be cleaned with bleach solution (or other lab-approved cleaning solution) before each use to remove any extraneous debris. At a minimum, tools will be cleaned and new bench paper will be used for each item when multiple items are received packaged together.

Generally, for any method used, a clean sheet of butcher paper will be used on the table for each evidence package opened.

Evidence from victim(s) and suspect(s) will be examined in separate rooms to prevent cross contamination. The examiner will change lab coats between the examination of items from victim(s) and suspect(s). If separate rooms are not available, items from victim(s) and suspect(s) can be processed in the same room after a period of 7 days.

8.2 Procedure

Equipment, Materials, and Reagents

- Butcher paper
- Tweezers
- Plastic zipper bags
- Clear packing tape or trace evidence lifters

There are several options available for ensuring that trace evidence is properly collected/stored/preserved. These are as follows:

1. Visual examination: locate and remove trace evidence from the evidence item with tweezers. Recovered trace will be placed in a suitable labeled container (zipper bags or on tape) to prevent loss or contamination of the sample.

2. Tape Lifting: clear tape is pressed over the area potentially bearing trace evidence. This application is repeated until all areas of interest are covered. New tape should be used once the tape in current use loses its stickiness. Tape(s) will be placed on the inside surface of a clean cut open zipper bag or a sheet protector. The bag/protector will be labeled as to its contents.
3. Retaining in butcher paper: Trace evidence may also be preserved by retaining the evidence item in butcher paper. The evidence item may only be opened in a clean trace environment to prevent contamination and/or loss.

Place all collected trace evidence in the original evidence container with the item from which it was collected.

The observation or collection of trace evidence must be documented on the appropriate examination documentation. Examiners should not make any attempt to identify on their worksheets what was collected (i.e. hair, fiber, etc) unless they also possess current training in the disciplines of Trace Evidence. However, it is permissible for sample descriptions to include adjectives such as “apparent” or “-like” when describing trace evidence (e.g., hair-like or apparent fibers).

8.3 Reference

1. Saferstein, R. (2007). *Criminalistics: An Introduction to Forensic Science, Ninth Edition.* Upper Saddle River, New Jersey: Pearson/Prentice Hall.