Title: Physical Evidence Examination

A. PURPOSE:

To examine physical evidence for the presence of blood, semen, saliva, trace materials and/or other body fluids. To collect and preserve samples for further analysis.

B. RESPONSIBILITY:

Forensic Science Examiners from the Connecticut State Forensic Science Laboratory who have been trained in the discipline of physical evidence examination according to SOP-FB-31 (Training Manual) and SOP-GL-4 (LIMS/Justice Trax).

C. SAFETY:

Use appropriate measures for the proper handling of physical evidence according to SOP-GL-2 (Safety Manual).

D. DEFINITIONS:

LIMS: Laboratory Information Management System

E. PROCEDURE:

Physical evidence will be examined and serological tests will be performed based on the examiner's knowledge, training and experience according to the submitting agency requests, case information and the condition of the evidence.

1. Cleaning Utensils and Laboratory Areas

    a. Clean utensils and lab equipment between each item or sample examined or handled with the appropriate disinfecting solution described in SOP-FB-27, followed by ethanol.

    b. Clean laboratory surfaces between each case, submission or item examined as needed with the appropriate disinfecting solution described in SOP-FB-27.

    c. Replace examination paper between each submission or item examined.

2. Evidence Retrieval

    a. Examiners will be notified of case assignments by a Forensic Biology Supervisor or through the LIMS computer system according to SOP-GL-4 (LIMS/Justice Trax).

b. Examiners will retrieve evidence from the Evidence Receiving Unit through a secure transfer with the LIMS computer system according to SOP-GL-4 (LIMS/Justice Trax).

E. 3. Evidence Examination

- All examinations are conducted macroscopically unless otherwise recorded on the appropriate Quality Record Worksheets (FBQR-01 through FBQR-04, FBQR-06 and FBQR-13).
- For additional information, refer to the Work Instructions described in SOP-FB-31 (Training Manual).

a. Document the package and evidence according to the appropriate Quality Record Worksheets (FBQR-01 through FBQR-04, FBQR-06 and FBQR-13). For evidence submitted as swabs, include the location that the swabs were collected from, if available.

b. When possible, leave the submitting agency seal intact when opening the package.

c. Use blue ink to record all information, including the intended evidence disposition, on the appropriate Quality Record Worksheets (FBQR-01 through FBQR-04, FBQR-06 and FBQR-13). Date all documentation and test results. Attach sketches, photocopies and/or photographs as necessary. Photographs may be used as worksheets. The date the photograph is taken is retained in the metadata of that digital image.

d. All reagents that are used during examination are recorded on the appropriate Quality Record Worksheets (FBQR-01 through FBQR-04, FBQR-06 and FBQR-13) and the General Reagent Sheet (FBQR-09). An electronic reference will be maintained for tracking these reagents.

e. If the submission contains more than one (1) piece of evidence, sequential item numbers shall be designated for each object, as necessary. See examples listed under E. 4.

f. Evidence that is received wet, should be removed from the package and air dried. Once dry, the evidence may be examined or re-packaged and sealed until future examination.

g. Collect trace materials from the evidence when necessary.

h. Use an alternate light source to locate stains, if necessary, and mark the location on the evidence. Record the alternate light source used on the appropriate Quality Record Worksheets (FBQR-01 through FBQR-04 and FBQR-13).

i. Perform serological tests according to SOP-FB-07 through SOP-FB-17 (Forensic Biology Serological Tests) and SOP-FB-03 (Flow Charts).

j. Sample Selection is conducted according to the substrate and the type and amount of sample present.

Sample Selection details will be included on the appropriate Quality Record Worksheets (FBQR-01 through FBQR-04, FBQR-06 and FBQR-13) according to SOP-GL-1 (Quality Manual). These details will not be included with the results stated in the report.

E. 3. k. When appropriate, collect blood and/or body fluid samples from the evidence based on the submitting agency requests, case information, type of evidence/stain(s) and number, size and quantity of stain(s).

l. Samples for touch/wearer DNA analysis may also be collected based on the submitting agency requests, case information and type of evidence.

m. A physical match examination may be performed macroscopically and microscopically to determine if two (2) items can be physically fit together demonstrating that they were once part of the same item. A 2nd examiner will observe and confirm the physical match and initial the Quality Record Worksheet.

n. A sample may be examined macroscopically and microscopically to determine if it is tissue-like material. Record the findings on the appropriate Quality Record Worksheet.

o. Mark the evidence, sketches, photocopies and/or photographs with the location where the samples were collected.

p. Mark the package and evidence with the examiner's initials.

q. Designate or sub-item the samples collected using the letter 'S' for the Forensic Biology Section with the corresponding sample number. See examples listed under E. 4.

r. Once the examination(s) is/are complete, place the evidence back in the original packaging, seal and initial the seal. If the original packaging is not suitable for re-packaging do not discard. Place with evidence in new packaging, seal and initial the seal. Store evidence in the designated storage area.

s. Create the samples collected from the evidence in the LIMS computer system according to SOP-GL-4 (LIMS/Justice Trax) using the designated sub-items. For evidence submitted as swabs, include the location that the swabs were collected from, if available.

t. Store samples in designated, secure and temperature appropriate areas or transfer to other sections of the Laboratory using the LIMS computer system according to SOP-GL-4 (LIMS/Justice Trax). Print the LIMS transfer sheets as needed. Record transfers to other sections on the Request for Examination Sheet (FBQR-10).

u. If forwarding sample(s) to DNA, create the appropriate DNA request(s) using the LIMS computer system according to SOP-GL-4 (LIMS/Justice Trax).

v. A secure and password protected LIMS computer system is used in accordance with SOP-GL-5 (Ethics).

w. The transfer of samples from laboratory cases which were opened prior to 1998, will be recorded on the Evidence Transfer Sheet (FBQR-11).

E. 4. Examples of evidence/sample itemization in LIMS

a. For submissions containing one (1) piece of evidence (i.e. one (1) baseball cap or one (1) swab carton):

Samples retained from the submission are sequentially itemized as #1S1, #1S2, #1S3, etc., for example:

aa. #1S1 for a cutting of a blood-like stain from the cap

#1S2 for a swabbing from the interior rim of the cap

#1S3 for trace materials from the cap

bb. #1S1 for swab tips from #1 with location

b. For submissions containing more than one (1) piece of evidence (i.e. three (3) swab cartons or a gun and a magazine):

Each piece of evidence is sequentially itemized as #1-1, #1-2, #1-3, etc., for example:

aa. #1-1 for swabs from location #1

#1-2 for swabs from location #2

#1-3 for swabs from location #3

bb. #1-1 for the gun

#1-2 for the magazine

Samples retained from the items are sequentially itemized as #1-1S1, #1-1S2, #1-2S1, etc., for example:

aa. #1-1S1 for swab tips from item #1-1 with location #1

#1-2S1 for swab tips from item #1-2 with location #2

#1-3S1 for swab tips from item #1-3 with location #3

bb. #1-1S1 for a swabbing from the handle/grip of the gun

#1-1S2 for a swabbing from the trigger of the gun

#1-2S1 for a swabbing from the magazine

c. For submissions containing fingernail clippings:

aa. For one (1) submission containing fingernail clippings which will be collected as one (1) sample (i.e. clippings with blood-like stains or clippings with no observable biological material):

- Itemize as #1S1 for a swabbing of the fingernail clippings.

E. 4. c. bb. For one (1) submission containing fingernail clippings (i.e. two (2) clippings with blood-like stains, one (1) clipping with tissue-like material and clippings with no observable biological material):

Samples retained from the clippings are sequentially itemized as #1S1, #1S2, #1S3, etc., for example:

- #1S1 for a swabbing of two (2) clippings with blood-like stains
- #1S2 for a swabbing of one (1) clipping with tissue-like material

- #1S3 for a swabbing of clippings with no observable biological material

d. Any portion of a sample being forwarded for DNA analysis while the remaining portion is being retained in Forensic Biology should be itemized as #1S1* and #1S1, for example:

aa. #1S1* for the portion of a cigarette butt being forwarded for DNA analysis

#1S1 for the remaining portion of a cigarette butt retained in Forensic Biology

bb. #1S1* for the portion of a cutting (bloodstain) being forwarded for DNA analysis

#1S1 for the remaining portion of a cutting (bloodstain) retained in Forensic Biology

F. REFERENCES:

1. SOP-GL-1 (Quality Manual).
2. SOP-GL-2 (Safety Manual).
3. SOP-GL-4 (LIMS/Justice Trax).
4. SOP-GL-5 (Ethics).