Document Title: Training Manual/Work Instructions
Controlled: Yes, with red stamp present
Controlled By: Quality Manager

Prepared By: _____ Date: _____

Approved By: _____ Date: _____

A. PURPOSE:

To train forensic science examiners to examine evidence, perform serological tests and use the LIMS computer system.

B. RESPONSIBILITY:

Forensic Science Examiner 2 or designee of the Forensic Biology Section.

C. SAFETY:

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

D. DEFINITIONS:

1. LIMS: Laboratory Information Management System
2. SAEC Kit: Sexual Assault Evidence Collection Kit
3. ABAcard® HemaTrace® and p30: Rapid Immunoassays
4. RSID: Rapid Stain Identification
5. KM: Kastle-Meyer
6. o-tol: o-Tolidine
7. AP: Acid Phosphatase
8. dH_2O: deionized water
9. OCME: Office of the Chief Medical Examiner

E. PROCEDURE:

Training Guidelines for the Forensic Biology Section

As of January 1, 2011 this training outline will be followed for all persons newly assigned to the Forensic Biology Section. The amount of time necessary to achieve proficiency in any area may be affected by the previous experience and training of the individual examiner. The Forensic Biology Supervisor or designee will oversee all training.

An electronic copy of the following check-list will be separately maintained as a working copy and will be printed out for use as needed.

I. Introduction

Complete	Initials	Date	
_____	_____	_____	**Goals:** Upon completion, the examiner will be familiar with the Forensic Laboratory operation.
			Tasks:
_____	_____	_____	Orientation to the Laboratory facility and personnel
_____	_____	_____	Instruction on the organizational structure, code of ethics and the chain of command
_____	_____	_____	Familiarized with building security and confidentiality requirements
_____	_____	_____	Introduction to the quality control measures, including required documentation
_____	_____	_____	Familiarized with safety procedures, chemical handling and proper handling of biohazardous materials such as blood and body fluids, incident reports and fire/emergency procedures.
			Reading:
_____	_____	_____	SOP-GL-1 through SOP-GL-20
_____	_____	_____	DPS A & O Manual
_____	_____	_____	SOP-FB-19 through SOP-FB-30

II. Scientific Knowledge

Complete	Initials	Date	
_____	_____	_____	**Goals:** To ensure the examiner has the formal education and working knowledge of the fundamental basis of serology and physical evidence examination.
			Tasks:
_____	_____	_____	Document a Bachelor's degree or higher in a physical or closely related science.
_____	_____	_____	Document Laboratory training and experience in Forensic Science or a closely related field.
			Reading:
_____	_____	_____	SOP-FB-01 through SOP-FB-31 and Appendix
_____	_____	_____	DeForest, P. R., Gaensslen, R. E. and Lee, H. C., Forensic Science: An Introduction to Criminalistics, Chapter 6:"Transfer and Trace Evidence," Chapter 9: "Blood" and Chapter 10: "Body Fluids," McGraw-Hill, Inc., 1983.
_____	_____	_____	Lee, H. C. "Identification and Grouping of Bloodstains," Forensic Science Handbook,vol.1, ed. Richard Saferstein, Prentice hall, Inc. 1982, pp267 – 337.
_____	_____	_____	AS A REFERENCE: Gaensslen, R. E., Sourcebook in Forensic Serology, Immunology, and Biochemistry, National Institute of Justice,1983.

III. Applied Technical Knowledge

Complete Initials Date

_____ _____ _____ **Goals:** To demonstrate specific knowledge related to the field of Forensic Biology.

Tasks:

_____ _____ _____ Received instruction on the theory and techniques specific to the examination of physical evidence for the presence of blood and/or body fluids, including but not limited to:

- Recognition of evidence
- Recognition of patterns
- Documentation of damage
- Documentation and identification of blood and/or body fluid stains
- Proper preservation of evidence, transport and/or transfer of evidence for further testing

Reading:

_____ _____ _____ Validation studies for various procedures utilized in Forensic Biology
_____ _____ _____ SOP-FB-01 through SOP-FB-31 and Appendix
_____ _____ _____ Review of 10 case files completed by another examiner in the area of Forensic Biology to be chosen by the Section Supervisor.

IV. Evidence Handling and Examination

Complete Initials Date

_____ _____ _____ **Goals:** Upon completion, the examiner will be familiar with the proper techniques for documentation, handling and the transfer of physical evidence, both general and specific to the Forensic Biology Section. The examiner will also develop the critical thinking skills necessary to evaluate the case circumstances and ensure all necessary testing has been requested.

Tasks:

_____ _____ _____ Familiarized with the proper procedures for documenting the evidence packaging and labeling.
_____ _____ _____ Learned to properly handle physical evidence with blood/body fluid stains and to preserve and package cuttings, swabs and/or trace materials for future testing.
_____ _____ _____ Learned the proper technique for handling and preserving liquid blood samples
_____ _____ _____ Learned the operation of the LIMS system, packaging designation of sub-items, maintenance of the chain of custody of the evidence, transfer of evidence to another section, and transfer of sub-items into their proper storage locations

Reading:

_____ _____ _____ SOP-GL-1 (Quality Manual)
_____ _____ _____ SOP-GL-4 (LIMS/Justice Trax)
_____ _____ _____ SOP-FB-01, SOP-FB-02 & SOP-FB-05

V. Laboratory Analytical Procedures

Complete	Initials	Date	
_____	_____	_____	**Goals:** To provide practical instruction to the examiner on routine analytical procedures utilized in the Forensic Biology Section.
			Tasks:
_____	_____	_____	Received instruction and training in the following procedures: • Screening tests for blood and body fluids – KM, o-tol, AP, urobilinogen, amylase • Identification tests for blood and body fluids – staining for spermatozoa, sperm searches, ABAcard p30, RSID-Semen, Takayama, ABAcard HemaTrace, RSID-Blood and RSID-Urine. • Successful completion of a competency and/or proficiency for each type of examination and evaluated by the supervisor or a designee. • Side by side examination of evidence with a supervising examiner or a designee. • Training in specific Forensic Biology safety issues involving techniques and potential chemical/biological exposures (SOP-GL-02 Safety Manual
_____	_____	_____	Received instruction and training in the following procedures: • After a 6 month probationary period and the successful completion of above training, the examiner will be assigned small cases. All work will be checked by another examiner, who will also co-sign the reports. • With increasing experience, the examiner will be assigned more complex/larger cases. • Retraining, if needed, will be performed and a competency/proficiency test will be given (SOP-GL-14 General Training)
			Reading:
_____	_____	_____	SOP-FB-06 through SOP-FB-18 and Appendix
_____	_____	_____	SOP-GL-02 (Safety Manual)
_____	_____	_____	SOP-GL-14 (General Training)
_____	_____	_____	Corresponding journal articles relating to the specific procedure, as applicable.

VI. Report Writing and Review

Complete	Initials	Date	
_____	_____	_____	**Goals:** To learn the Laboratory protocol for report writing, report review, finalization of reports and review of LIMS procedures.
			Tasks:
_____	_____	_____	Learned Laboratory and Section guidelines for the writing of reports, and the completion of the documentation in LIMS.
_____	_____	_____	Completed a written report of proficiency or competency test results.
			Reading:
_____	_____	_____	Review of 10 reports and supporting documents prepared by another examiner, as determined by the section supervisor.
_____	_____	_____	SOP-GL-4 (LIMS/Justice Trax)
_____	_____	_____	SOP-FB-05 (Case Records and Reports)

VII. Legal Issues

Complete	Initials	Date	
_____	_____	_____	**Goals:** To become familiar with the legal requirements for testimony in the state of Connecticut.
			Tasks:
_____	_____	_____	Received instruction on the following:

- Qualifications
- Technical testimony
- Courtroom dress and demeanor
- Ethical responsibilities of an expert witness
- Laboratory courtroom monitoring procedures
- Presentation of evidentiary findings
- Pertinent rules of the courtroom

_____	_____	_____	Attended a minimum of 2 courtroom testimonies of another examiner in the Forensic Biology Section.
_____	_____	_____	Moot court conducted by examiners in the Forensic Biology Section
			Reading:
_____	_____	_____	Transcripts or sample testimony of examiners in the Forensic Biology Section
_____	_____	_____	Admissibility requirements: *State v. Porter, Frye, Daubert*

Work Instructions

1. Work Instructions for the Collection of Samples from Evidence
   a. For Testing
      aa. Moisten a cotton swab with dH_2O and lightly swab the questioned stain.
      bb. Scrape the stain from a hard surface and test directly.
      cc. Cut a piece of fabric, swab or other substrate and test directly.
   b. For Retention
      aa. Collection Methods
         - Moisten a cotton swab with dH_2O. Swab the questioned stain or the area for touch/wearer DNA. For additional information, refer to SOP-FB-32 (General Guidelines for Collecting Samples and Forwarding Swabs to DNA).
           Note: 0.5% ammonia may be used for blood-like stains that are difficult to remove.
         - Scrape the stain or debris from a hard surface.
         - Cut the stain from a piece of clothing or other material.
         - For stains on swabs, retain the swab tip.

      bb. Samples can be retained in a plastic tube, a paper-fold or a tin and then into a Ziplock bag.
      cc. When appropriate, outline the area of the sample retained on the piece of evidence. The area may be labeled with the designated sample number (e.g. S1, S2) at the discretion of the examiner.
   c. Extracted samples (remaining extract and/or extracted substrate will be considered work product, therefore is not considered evidence and is not tracked through LIMS).
      aa. Retain all semen extracts and store in further analysis freezer storage.
      bb. Retain blood extract(s) if the sample is limited and store in further analysis freezer storage. If the sample is not limited then discard extract.
      cc. Retain the extracts by removing the extracted sample from the basket, placing it into the extract tube and sealing the tube with parafilm. Place the extract tubes in a separate Ziplock bag and retain with the other samples in another Ziplock bag.

2. Work Instructions for Sexual Assault Evidence Collection (SAEC) Kit Examination
   All examinations are conducted macroscopically unless otherwise recorded on the Sexual Assault Evidence Collection Kit Quality Record Worksheet (FBQR-05).

   a. Enter the pertinent case information in the SAEC Kit log book, maintained in the Forensic Biology Section.

   b. Transfer the kit into your name in LIMS according to SOP-GL-4 (LIMS/Justice Trax).

   c. Obtain a SAEC Kit worksheet (FBQR-05) to record results of examination and analysis.

   d. Make a copy of the yellow medical form, the front cover of the kit and any additional labels/seals as needed. Label these photocopies with the Lab ID# and examiner's initials in the upper right corner.

E. 2. e. Inventory

aa. Inventory the contents of the kit and cross out any items that were not collected on page 1 of the worksheet. Place the unused envelopes and bags back in the kit (unlabeled). Place examiner's initials in the appropriate location on page 1 of the worksheets.

bb. Label the used envelopes/bags with the Lab ID#, item #/letter (from page 1 of the worksheets) and examiner's initials.

cc. Record any written information from the envelopes, such as sample origin or reason sample not collected, on the worksheet.

f. Known Blood Sample

aa. Retain a known bloodstain according to SOP-FB-06 (Whole Blood Sampling and Preservation).

bb. 'CT 100' Kit (manufactured prior to January, 2011)

- If a Toxicology request has been made, retain a bloodstain from the red top tube and transfer the purple top tube to the Evidence Receiving Unit.
- If a known blood sample is not included in the kit, retain the inner envelope of the known saliva sample. Label this envelope with the Lab ID#, item #/letter and examiner's initials.

cc. Revised 'CT 100' Kit (manufactured January, 2011 or later)

- No red top tube blood sample is included in the revised kit. If Toxicology analysis is requested on this blood sample, transfer the purple top tube to the Evidence Receiving Unit and request a known buccal sample from the victim.
- No saliva sample is included in the revised kit. Request a known buccal sample from the victim if a known blood sample is not included in the kit.

g. Sperm Search

Note: It is at the discretion of the examiner whether a hospital prepared smear will be examined or not, prior to analysis of the corresponding swab.

aa. Label the smear holder with the Lab ID#, item #/letter and examiner's initials.

bb. 'CT 100' Kit (manufactured prior to January, 2011)

- Label the two (2) smear slides on the frosted edge in pencil with the Lab ID#, item #/letter and examiner's initials.

cc. Revised 'CT 100' Kit (manufactured January, 2011 or later)

- Label the one (1) smear slide on the frosted edge in pencil with the Lab ID#, item #/letter and examiner's initials.

dd. Conduct a preliminary, unstained search at 200X of a smear appropriate for the case (vaginal, oral and/or anal), placing the slide on a microscope stage with the frosted edge to the left. Note red blood cells if present on the worksheets.

ee. If positive (the identification of intact spermatozoa, i.e. the head, neck and tail or the identification of non-intact spermatozoa, i.e. only the head portion), record the results of the sperm search on the worksheet according to the following rating:

- 4+ - numerous sperm in every field
- 3+ - a few sperm in every field
- 2+ - sperm not in every field but easy to locate unstained
- 1+ - a few sperm (coordinates are needed to relocate)

E. 2. g. ff. Record coordinates (if needed to relocate the sperm), scope # and examiner's initials.

gg. If no spermatozoa are located after a quick preliminary search, stain a smear from each appropriate orifice according to SOP-FB-13 (Identification of Spermatozoa). Conduct a full search of each smear.

hh. Record the results (including rating if positive) and the method of staining on the worksheets.

ii. Record search results in the SAEC Kit logbook.

h. Positive Smears

aa. If spermatozoa are identified on the smears, retain the corresponding swabs for future testing. *Note: If vaginal smear is positive, retain the genital swabs and/or dried secretion swabs (depending on location).*

bb. Note appearance and quantity of swabs on worksheets.

cc. Retain any trace from swabs/smears in a paper fold and place into a coin envelope. Label the paper fold and coin envelope with the Lab ID#, item #/letter and examiner's initials. *Note: Sub-item the trace retained using the letter 'S' designation with the corresponding sample number (ex. #1C-S1).*

dd. Place swab tip(s) with ~ ½" of the stick in a microcentrifuge tube or paper fold. Label the tube or paper fold with the Lab ID#, item #/letter and examiner's initials.

ee. The tubes/paper folds are placed in a Ziploc bag with the Lab ID#, heat sealed and initialed. Store Ziploc bag in freezer storage.

i. Negative Smears

aa. If no spermatozoa are identified, proceed to processing the corresponding swabs (vaginal, oral and anal) for acid phosphatase according to SOP-FB-11 (Screening Test for Semen) and/or amylase according to SOP-FB-15 (Test for Amylase) as the case warrants.

bb. If assault was vaginal or anal, process the genital swabs for acid phosphatase according to SOP-FB-11 (Screening Test for Semen) and/or amylase according to SOP-FB-15 (Test for Amylase) as the case warrants.

cc. Process the dried secretion swabs for acid phosphatase according to SOP-FB-11 (Screening Test for Semen) and/or amylase according to SOP-FB-15 (Test for Amylase) as the sample type and case warrants.

dd. Note appearance of swabs on worksheet. *Note: If swabs are heavily saturated with blood-like stains, examiner may proceed directly to extraction according to SOP- FB-12 (Extraction of Samples for Semen) without performing the acid phosphatase test.*

ee. Retain any trace on swabs/smears in a paper fold and label with the Lab ID#, item#/letter and examiner's initials. Place into a coin envelope and label with the Lab ID#, item #/letter and examiner's initials. *Note: Sub-item the trace retained using the letter 'S' designation with the corresponding sample number (ex. #1C-S1).*

ff. If the acid phosphatase test is negative, no further testing is conducted for semen at the discretion of the examiner.

gg. If the acid phosphatase test is positive, extract swabs according to SOP-FB-12 (Extraction of Samples for Semen).

E. 2. i. hh. Make a smear of the extract pellet or positive acid phosphatase swab, stain and search according to SOP-FB-13 (Identification of Spermatozoa).

Note: If the corresponding hospital prepared smear was examined, this step may be skipped for the vaginal, oral and/or anal swabs at the examiner's discretion.

ii. If no spermatozoa are identified, test the extract for the presence of semen according to SOP-FB-14 (Rapid Immunoassay Tests for Semen). *Note: If sample is heavily stained with fecal-type material or if breast milk is suspected, the ABAcard p30 test should not be used.*

jj. Retain the remaining swabs by placing the tip(s) with ~ ½" of the stick in a microcentrifuge tube or paper fold. Label the tube or paper fold with the Lab ID#, item #/letter and examiner's initials. Place the tubes or paper folds in a plastic Ziploc bag with the Lab ID# and examiner's initials.

kk. Retain the extracts by removing the extracted swab from the basket, placing it into the extract tube and sealing the tube with parafilm. Place the extract tubes in a plastic Ziploc bag and place into the main plastic bag with the other samples. Heat seal the main plastic bag or heat seal each of the two bags separately and staple together. Store the Ziploc bags in freezer storage.

ll. For 'CT 100' kits manufactured prior to January, 2011, search the second smear of each orifice (according to #2g) if case warrants.

j. If the orifice is not indicated, retain all swabs not tested.

k. Trace/Hairs

aa. Examine pubic hair combings for any trace/hair-like fibers macroscopically. If trace/hair-like fibers are present, retain in the inner paper fold. Record the contents on the worksheet. Label the inner paper fold with the Lab ID#, item #/letter and examiner's initials. Seal paper fold with tape.

bb. Known head hair and known pubic hair samples are retained in the inner envelopes. Label the inner envelopes with the Lab ID#, item #/letter and examiner's initials. If necessary, seal the inner envelopes.

cc. Examine the debris collection envelope macroscopically or microscopically under a stereoscope at a magnification of approximately 8-35X and retain any trace/debris in a paper fold. Label the paper fold with the Lab ID#, item #/letter and examiner's initials. Place into a coin envelope and label with the Lab ID#, item #/letter and examiner's initials.

dd. All retained trace/hair envelopes and paper fold/coin envelopes are stored in a sealed manila envelope. The manila envelope is labeled in the upper right corner with the Lab ID#, incident town and examiner's initials. Store the envelope at room temperature in Trace Storage-retained trace.

l. Fingernail Scrapings/Clippings: For additional information, refer to SOP-FB-32 (General Guidelines for Collecting Samples and Forwarding Swabs to DNA).

aa. Examine the contents for blood and tissue-like material. This may be done macroscopically or microscopically under a stereoscope at a magnification of approximately 8-35X. If warranted, test for blood according to SOP-FB-07 (Screening Tests for Blood).

- Record the presence of fingernail fragments, wooden sticks and/or trace/debris.
- Record the presence of blood-like stains and/or tissue-like material and test results.

E. 2. l. bb. If positive for blood and/or the presence of tissue-like material, retain inner paper folds and label them with the Lab ID#, item #/letter and examiner's initials. Place paper folds in a plastic Ziploc bag with other retained samples and store in freezer storage.

cc. If hair-like fibers and/or fibers are observed, retain separately in a paper fold. Label the paper fold with the Lab ID#, item #/letter and examiner's initials and place into a coin envelope. Label the coin envelope with the Lab ID#, item #/letter and examiner's initials. Retain coin envelope with other trace samples and store at room temperature in trace storage. *Note: Sub-item the hair-like fibers or fibers using the letter 'S' designation with the corresponding sample number (ex. #1N-LS1).*

dd. Place paper folds in a plastic Ziploc bag with other retained samples and store in freezer storage.

m. For any items not examined, note 'NEATT' (not examined at this time) on the SAEC worksheet.

n. Other: Underpants, etc.

aa. Examine underpants or other evidence according to SOP-FB-01 (Physical Evidence Examination).

bb. If an item of evidence is wet, dry under the hood prior to examination.

o. Attach the photocopies to the worksheets in the following order:

aa. Any appropriate worksheets for additional items examined

bb. Copy of medical report form

cc. Copy of front cover of kit

dd. Copies of any additional labels/seals

p. LIMS:

aa. Create the items that were retained (ex. #1A-1S1) according to SOP-GL-4 (LIMS/Justice Trax).

bb. Transfer the created items to the appropriate LIMS storage locations.

cc. Store the kit at room temperature in a locked evidence storage area until the report is ready and the evidence is returned to the Evidence Receiving Unit.

q. Reports:

aa. Write a report to the submitting agency summarizing the results of the examination according to SOP-FB-05 (Case Records and Reports).

bb. Positive kits:

- If biological material is identified (i.e. blood, semen, saliva, urine or feces), forward samples, as necessary, to the DNA Unit for processing. Touch or wearer DNA samples may also be forwarded.
- Request known samples from the victim and suspect if not submitted.

Negative kits:

- More evidence may need to be examined if the kit is negative. Review the paperwork and/or call the submitting agency to see what other evidence may be relevant/significant and is available for testing.

E. 2. q. bb.

- If questioned hair-like fibers were collected from the kit, they may be forwarded to the Trace Section for further examination. Request known hair samples from the victim and the suspect if necessary.

r. SAEC Kits submitted to the Laboratory that have been collected from an individual who does not want to report the incident to the police are designated as 'Civil'. These Kits are held without being examined in a designated refrigerated storage area for a minimum of 60 days. If the individual has not reported the incident to the police, the Kit will be returned after 60 days to the submitting agency unexamined.

3. Work Instructions for Office of the Chief Medical Examiner (OCME) Autopsy Samples

a. If OCME autopsy samples are submitted as a sexual assault kit, refer to SOP-FB-02 and the Sexual Assault Evidence Collection Kit work instructions.

b. Fill out a Physical Evidence Coversheet (FBQR-01)
   aa. List the items submitted as autopsy samples
   bb. Create barcodes, as necessary (OCME Case # as Submitting Agency Case #):
   - Known blood sample –Victim's Name
   - Known head hair sample – Victim's Name
   - Known pubic hair sample – Victim's Name
   - All known body hair samples – Victim's Name
   - Questioned hair or other trace samples
   - Fingernail scrapings/clippings
   - Other biological samples

   cc. Attach a photocopy of the original packaging's labels to the coversheet.

c. Known Blood:
   aa. Fill out a Whole Blood worksheet (FBQR-07).
   bb. Remove blood vial from container and label the vial with the Lab ID#, item # and examiner's initials.
   cc. Make a stain from the vial according to SOP-FB-06 (Whole Blood Sampling and Preservation).
   dd. Return the vial to the container. If no container is pr esent, use a falcon tube from Laboratory stock. Reseal the container with evidence tape, place the barcode on the container and initial the seal and barcode. Place into refrigerator storage.
   ee. If the case warrants, containerize the item # (known blood sample) into the submission # (Autopsy Samples) in LIMS. Return the known blood sample vial and container in the original packaging to the Evidence Receiving Unit.

E. 3. d. Known Hairs:
- aa. Label the known hair envelopes (ex. head hairs, pubic hairs) with the Lab ID# and item #.
- bb. Place the known head hair sample, the known pubic hair sample and the body hair sample(s) into separate manila envelope(s) (approximately 4"x 6"). Place the appropriate barcode(s) on the envelope(s).
- cc. Place the envelope(s) in a larger manila envelope (approximately 9" x 12"), label with the Lab ID#, incident town and examiner's initials. Seal with tape, initial the seal and place in trace storage.

e. Questioned hairs or other trace samples:
- aa. Label the envelopes/container with the Lab ID# and item #.
- bb. Package in a manila envelope (approximately 4"x6"). Place the barcode on the envelope.
- cc. Place the envelope in the same larger manila envelope (approximately 9" x 12") as the known hair samples (see paragraph 3. d. cc. above).

f. Fingernail scrapings/clippings:
- aa. Label the fingernail scrapings/clippings envelope(s) with the Lab ID# and item #.
- bb. Place fingernail scrapings/clippings in a manila envelope (approximately 4" x 6"). Place the barcode for the fingernail scrapings/clippings on this envelope.
- cc. Place the envelope(s) in a plastic Ziploc bag, heat seal and initial the seal. Place in freezer storage.

g. Other Biological Samples: (ex. muscle, liver, bone)
- aa. Place barcode on outer packaging.
- bb. Place in freezer storage.

h. Create the bloodstain, all known hair samples, fingernail scrapings/clippings and other trace/biological evidence in LIMS according to SOP-GL-4 (LIMS/Justice Trax). Transfer all evidence to the appropriate storage areas and print out LIMS Transfer Sheets:
- aa. FTA Blood Storage = known bloodstain
- bb. Trace Storage – retained trace = known hairs, questioned trace samples and original packaging (if not returning known blood sample to Evidence Receiving)
- cc. Freezer Storage – Fingernail scrapings/clippings = fingernail scrapings/clippings and other biological samples
- dd. Refrigerator Storage – OCME Bloods = known blood sample (if not returning to Evidence Receiving)
- ee. Freezer Storage – to be examined = other biological samples

i. Complete all LIMS requests according to SOP-GL-4 (LIMS/Justice Trax).

j. If no analysis is performed on these samples, no report is generated.

E. 4. Work Instructions for the Documentation and Collection of DNA Samples from Firearm Evidence

For additional information, refer to SOP-FB-32 (General Guidelines for Collecting Samples and Forwarding Swabs to DNA).

Firearm:

a. Photocopy or photograph the labeling information from the submitting agency and the laboratory's barcode.

b. Upon opening the sealed package, photograph the contents as received.

c Photograph any additional labels or evidence tags that may be attached to the enclosed weapon. During the photography process, make sure that the camera has been wiped down with a dilute bleach solution and new gloves are used to handle the camera.

d. Photograph the weapon showing both sides of the frame and then photograph from various angles if necessary, including weapon manufacturer, model and serial number:

E. 4. e The following photographs are an example of documentation of all sides of the weapon.

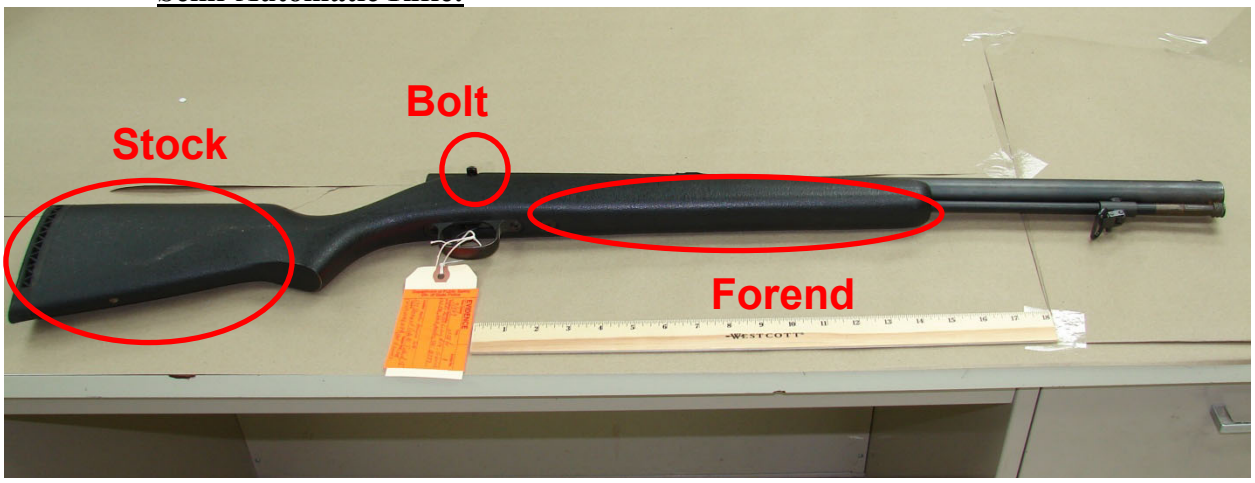
f. The following areas are typically swabbed:

- Handle/handgrip/pistol grip (see photos)
- Trigger
- Slide (pistol)
- Cylinder latch release/loading area (revolvers)
- Forend/Forearm (rifles and shotguns)
- Bolt (rifles and shotguns)
- Hammer (shotguns)

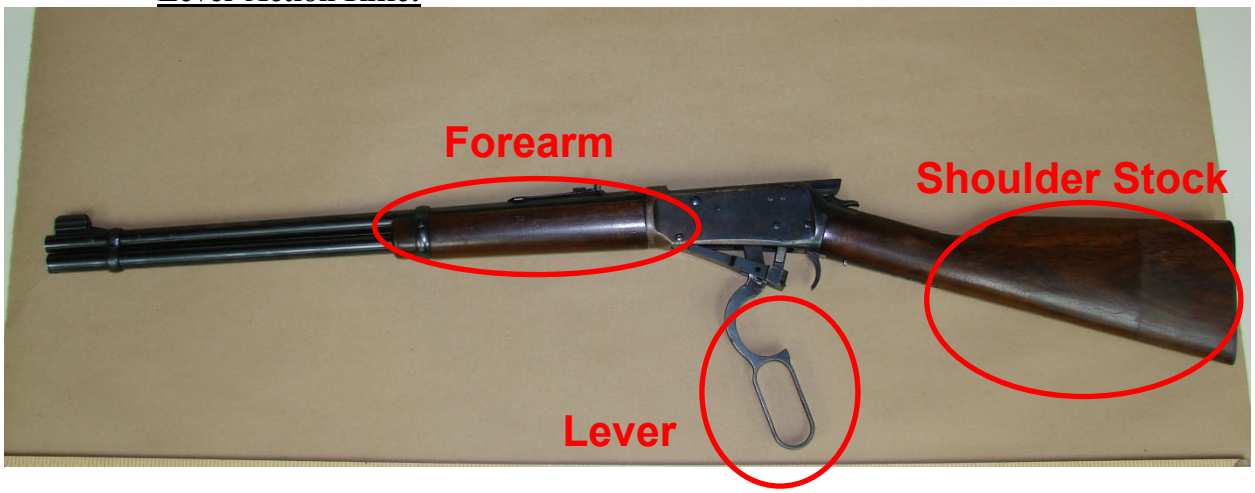
Semi-Automatic Handgun

E. 4. f. **Revolver:**

Semi-Automatic Rifle:

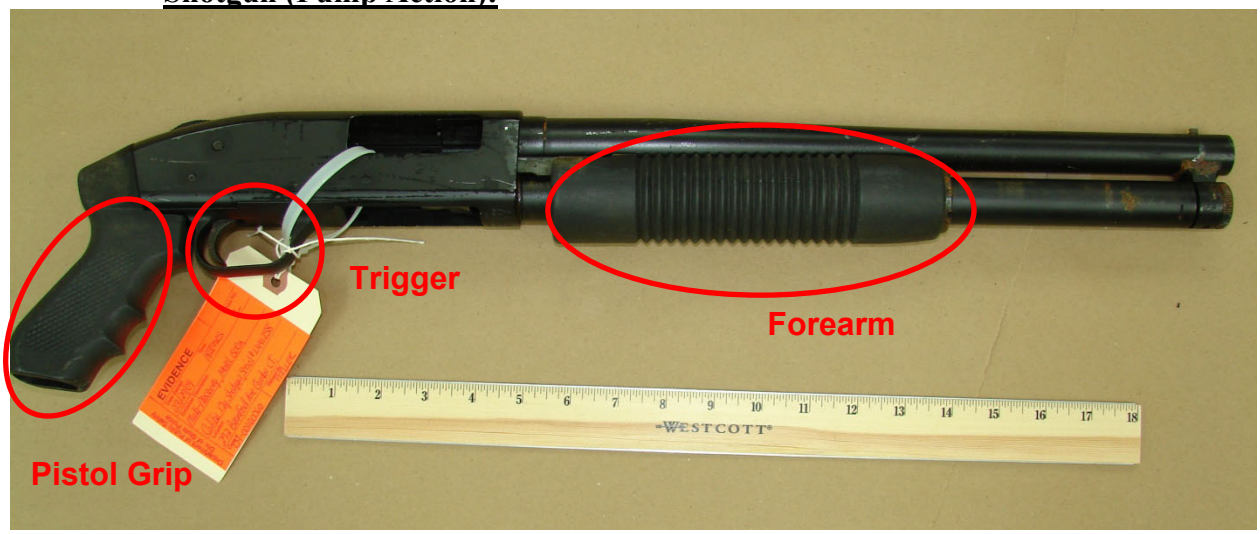


Lever Action Rifle:

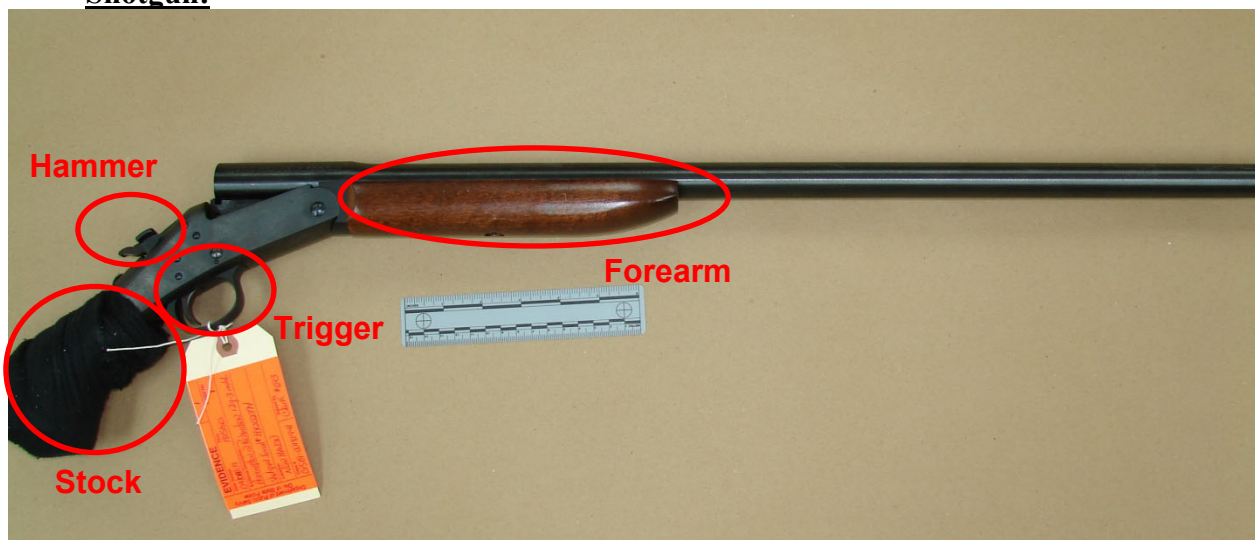


E. 4. f. **Semi-automatic Rifle**

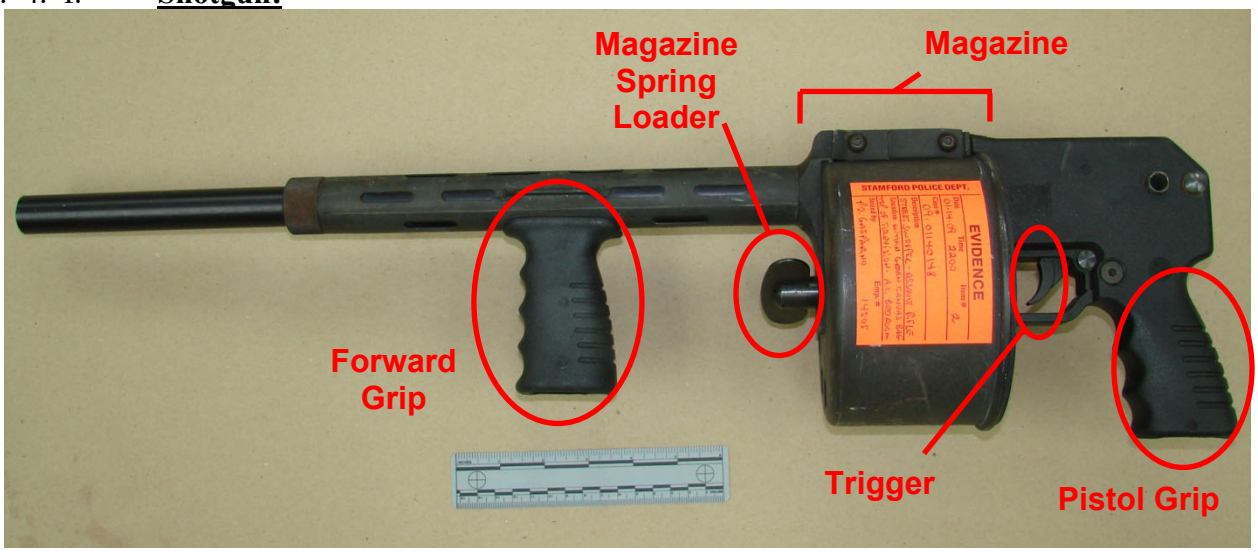
Shotgun (Pump Action):



Shotgun:



E. 4. f. **Shotgun:**

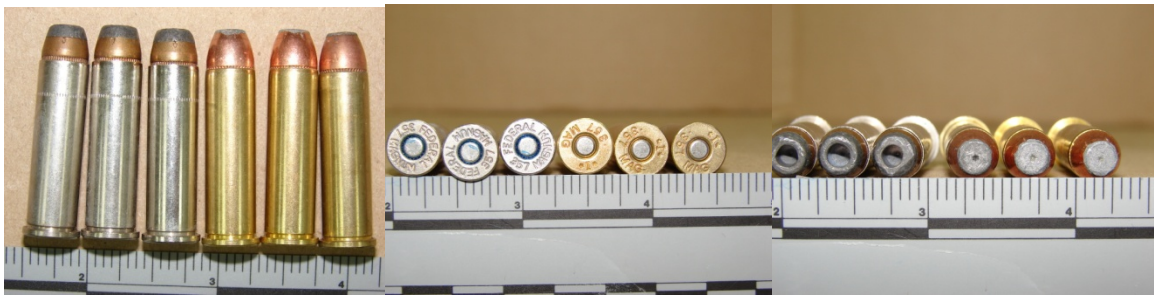


g. **Cartridges:**

Only cartridges with the following calibers (.22 cal, .25 cal. and .32 cal) are to be swabbed when there is a Latent Print request for processing. If no Latent Print request is present, all calibers of cartridges can be swabbed.

aa. Cartridges are to be photographed from all sides noting the caliber and manufacturer headstamp. Any defects should also be noted.

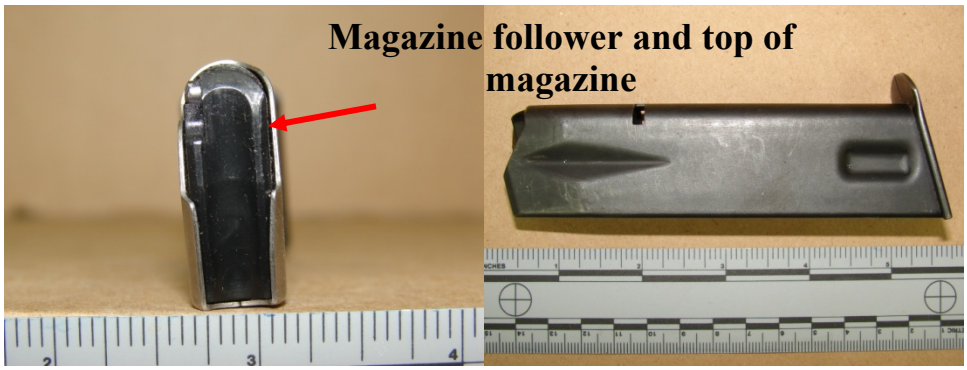
bb. All sides of the cartridges are swabbed as one (1) sample using two (2) swabs.



h. **Magazines:**

If a latent print request is noted on the magazine submitted, only swab the magazine follower and top of magazine. If no latent print request is present, the entire magazine is swabbed. Alternatively, the magazine may be processed by Latent Prints prior to swabbing for DNA.

E. 4. h.



i. Sample collection for DNA:

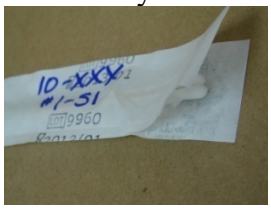
aa. Label one (1) of the swab packages that will be used for sample collection.

bb. Open two (2) swab packages.

cc. Moisten the swabs with dH_2O.

dd. Swab the area slowly turning the swabs to ensure that all sides come in contact with the area.

ee. Place the swabs back into the 'labeled' package holder with the moistened tip facing outward so that it can air-dry.



ff. Place this package into a secure locker or under a hood that will not have any other evidence present.

E. 4. i. gg. Allow swab to air-dry for several hours to overnight.

hh. After drying, label an autoclaved 2ml tube with the Lab Id Number, sample number and examiner's initials.

ii. Place the swab tips into the base of the tube and snap off the remainder of the stick, leaving approximately ½"-1" of the stick.

jj. Place the tubes containing the samples collected in this case into a labeled Ziploc® bag, heat seal, initial the heat seal and place in freezer storage.

kk. Create samples in the LIMS system as sub-items of evidence according to SOP-GL-4 (LIMS/Justice Trax).

ll. Transfer the samples into freezer storage.

mm. Replace the original evidence back into the package, seal the package with evidence tape and initial the seals.

nn. Forward the evidence to the appropriate Section for further testing.

F. REFERENCES:

1. SOP-GL-1 (Quality Manual).
2. SOP-GL-2 (Safety Manual).
3. SOP-GL-4 (LIMS/Justice Trax).
4. General Statutes of Connecticut, Vol. 6 [CGS § 19a-112a(d)], 2009, p. 930.