



## VIRGINIA DEPARTMENT OF FORENSIC SCIENCE

### EVIDENCE HANDLING & LABORATORY CAPABILITIES GUIDE

#### LATENT PRINTS

#### Contact Information

If you have any questions concerning the Latent Print examination capabilities or evidence handling procedures, please call the Training Section or the Latent Print Section at the Forensic Laboratory that services your area.

<b><u>Laboratory</u></b>	<b><u>Section Contact</u></b>	<b><u>Phone Number</u></b>
<b>Central</b>	<b>Amanda Lane</b>	<b>(804) 588-4029</b>
<b>Northern</b>	<b>Jessica Davis</b>	<b>(703) 334-9752</b>
<b>Eastern</b>	<b>Chris Claytor</b>	<b>(757) 355-5950</b>
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## OVERVIEW

Examiners in the Latent Print Section develop and recover latent prints from items of evidence, compare latent prints to known prints and conduct database searches.

### DEFINITIONS

**Latent Prints** – These prints may or may not be readily visible and could require some type of processing in order to better develop and detect them.

**Patent Prints** – These prints are normally readily visible. When friction ridges come into contact with materials such as soil, blood, ink, oil and paint or are impressed into substances such as putty or wax, impressions of the friction ridge skin are visible before any processes are employed.

**Known Prints** – These are impressions of the friction ridges that have been intentionally recorded via printer's ink or electronic scanning. Submission of comprehensive known prints provides the laboratory with the greatest opportunity to conduct complete latent print examinations.

**Elimination Prints** - Known prints of persons who could have had legitimate access to an item being submitted for latent print examination or an item or location from which prints have been recovered and submitted (e.g., business owner/employee or homeowner/resident where a burglary is being investigated).

If the examiner has access to known prints of a suspect or victim, any recovered latent prints suitable for comparison can be compared to these first. Database searches of suitable latent prints will be conducted if there are no known suspect(s) or elimination prints available. Additionally, searches will be conducted in a situation where all provided known prints have been excluded.

### SUBMITTED KNOWN PRINTS (EXEMPLARS)

Appropriate elimination prints for people who are likely to have touched the surfaces being processed for latent prints (i.e., victims, family members, caretakers, store clerks, bank tellers, etc.) should accompany the evidence being submitted.

If there are known suspects, provide a State Identification Number (SID #) or Federal Bureau of Identification Number (FBI #) if available.

If an SID # or an FBI # is not available, every effort should be made to obtain a comprehensive set of fingerprints and palm prints and submit them with the evidence.

When applicable and possible, record and submit comprehensive postmortem fingerprints and palm prints.

Clear, high resolution, full size copies of exemplars may be submitted in lieu of originals if the originals are not available.

If there are no known suspects, or it is not possible to obtain suspect known prints prior to evidence submission (e.g., unable to locate suspect, lack of probable cause or suspect's consent), please indicate this on the Request for Laboratory Examination (RFLE) form.

All prints submitted should be of the highest quality possible, as this is important and necessary to the examination process. Avoid issues such as smudged or blurred prints, overlays, too much ink, uneven pressure and prints outside the blocks or off-centered.

### **AUTOMATED FINGERPRINT IDENTIFICATION SYSTEM (AFIS)**

Suitable latent fingerprints and palm prints can be searched in the Virginia AFIS or FBI Next Generation Identification (NGI) system.

When a search of these databases does not produce a candidate that is identified to the latent print, the latent print may be added to the unsolved latent database, in both the Virginia AFIS and NGI systems. As new fingerprint and palm print cards are entered into the systems, they are automatically searched against each latent print in the unsolved latent database.

A Certificate of Analysis (CoA) will be issued when a comparison is conducted on a latent in the unsolved latent database that could potentially be an identification. The CoA will not list the candidate's name, nor will any official comparison conclusion be made. The CoA will provide the submitting agency instructions on how to proceed to obtain a conclusive comparison conclusion.

### **RESUBMITTING EVIDENCE**

If a resubmission is necessary (i.e., for further comparisons), note the previous FS Lab number in the appropriate space on the RFLE and provide any digital media that was included with the evidence when the laboratory returned the evidence to your agency and/or the original lift cards.

### **COLLECTION GUIDELINES**

#### **Powder Processing and Lifting**

Latent prints developed with powder processing methods should be lifted and submitted to the laboratory. Detailed information concerning the case, date, location and orientation of the latent print should be recorded on the back of the lift card (Figure 1). If the same area was lifted more than once (i.e., two lifts of the same latent print), this should be indicated on the card as well, e.g., first lift, second lift.

No markings (i.e. circles, arrows) should be made on the lift tape itself.

<b>Date:</b>	<b>-Sketch of Latent Lift Location- (indicate latent lift orientation)</b>
<b>Case#:</b>	
<b>Offense:</b>	
<b>Recovery Location (Address):</b>	
<b>Location of Latent Lift #:</b> _____ _____ _____	
<b>Officer:</b> _____ <b>Badge/Code #:</b> _____	

(Figure 1)

If latent prints at a crime scene appear to be visible prior to processing (patent prints), or if the lift process may pose unique challenges (i.e., textured or uneven surface), the prints should be photographed prior to any attempts at lifting.

If any item of evidence is to be submitted to the laboratory for processing, do not attempt processing prior to submission. No further processing will be completed at the laboratory once any fingerprint processing has been initiated by an agency.

If multiple lift cards are submitted under the same item number, a sub-item number may be assigned to each latent lift card. If possible, each latent lift should be given a unique identifying alpha suffix (e.g., Item 4-a, 4-b, 4-c) by the submitting agency.

### Latent Print Photography and Submitted Digital Media

The camera should be mounted on a tripod, lens perpendicular to the latent print so that the digital sensor plane and the print are parallel. An appropriate camera that can obtain an image with a resolution of at least 1000 ppi in a lossless format (RAW) should be utilized. The print should fill the frame to ensure it is captured at the highest resolution possible (Figure 2). The print should be first photographed without a scale, then with a scale. The scale is necessary to calibrate the images to perform comparisons and database searches. The scale should include, at minimum, the case number and the photographer's initials.



(Figure 2)

Photographs of latent prints can be submitted to the laboratory in the form of digital media (i.e., CD or DVD). The digital media should be labeled with, at a minimum, the case number. Images should be in the TIFF file format. Most digital camera systems will not capture in a TIFF format, but rather a RAW (proprietary) format. Most systems will include software that allows for the conversion of images from RAW to TIFF. For additional guidance in this step, contact the Latent Print or Forensic Training Sections.

Any digital image submitted to the laboratory should not be enhanced or edited in any way. This includes, but is not limited to, cropping, inverting, or any automated processes that are completed by software.

If possible, the submitted digital media should only include images of latent prints (i.e., no overall crime scene photographs).

## **COLLECTION GUIDELINES**

### **ITEM - Non-Porous or Non-Absorbent Surfaces (Glass, Metal, Tile, etc.)**

**METHOD** - Items should be packaged in a rigid container, avoiding contact with the packaging material and the surface which is to be processed for latent prints. It is acceptable to place numerous, individually numbered and packaged items in one box if all items need to be examined by the Latent Print Section. Ensure items will not contaminate others in the same package (e.g., a leaking bottle, item coated in blood or other fluids that may transfer to other surfaces). Items should not be taped down to the container, as removing the tape could destroy any latent prints on that surface.

**DISCUSSION** - Unnecessary layers of packaging and handling may damage or even destroy a print(s). Handle the items in a manner **inconsistent** with normal handling (i.e., by the edges) or on textured areas.

### **ITEM - Porous or Absorbent Surfaces (Paper, Untreated Wood, Cardboard, etc.)**

#### **METHOD –**

##### **Dry Porous Items:**

Dry porous items can be collected and placed into plastic document protectors, zip lock plastic bags or paper bags.

##### **Wet Porous Items:**

Wet porous items should be air dried and packaged as you would dry items. Items that are packaged in plastic prior to being dried may form condensation and mold, which could damage any latent prints present.

**DISCUSSION** - Identifiable prints have been developed on items that have been exposed to moisture. Care should be taken when handling these items as the exposure to moisture may cause them to be fragile. Keep to a minimal amount of handling, even when wearing gloves.

## **Items with Patent (Visible) Prints**

Close-up photographs using the above explained protocols should be taken prior to attempts to collect the prints or the item. Photographs are important because damage to the impression may occur during attempts to move the surface containing the print, during packaging or transfer to the laboratory.

### **IMPORTANT COLLECTION DISCUSSION:**

For visible prints on small objects it is recommended to collect and submit the entire object. If the item is too large to submit, such as a bloody patent print on a wall, it may be necessary to cut out a section of the wall with the patent print. Be sure to leave a reasonable amount of surface material surrounding the patent print. A protective covering, **not tape**, may be placed over the print, but ensure the covering does not come into contact with the print.

Avoid pressing or touching the impression with your finger or any object to see if the substance is dry or tacky. Doing so may result in damage to the print.

### **SUBMISSION REMINDERS**

Do not attempt to process items (e.g., powder, super glue, ninhydrin, etc.), prior to submission.

Do not place tape on items of evidence.

Do not add shredded paper, foam peanuts or additional packaging material to the box as it will rub against the surface and possibly damage prints.

Ensure that sharp objects such as broken glass or knives are packaged safely and properly labeled:

“CAUTION - CONTAINS SHARP OBJECT(S) - BROKEN GLASS”

NOTE: Paper bags are not considered to be good materials for sharp or broken objects. Sharp objects can easily puncture the bag and cause injury.