



INDIANA STATE POLICE LABORATORY DIVISION

PHYSICAL EVIDENCE BULLETIN

LATENT PRINTS

The Forensic Latent Print Identification Unit is staffed by experienced forensic scientists who have substantial backgrounds in the identification field. All are qualified to appear in court and provide expert testimony in matters of latent print examinations.

There are limits on the information that can be obtained from latent print examinations. The identification of a print on an object to a specific individual proves only that the person touched the object at some point in time. The analyst cannot determine under what circumstances a print was placed on an object, nor can they determine how long a print has been on an item. It is not possible to determine sex, age, or race from a latent print. Failure to develop an individual's latent prints on evidence does not prove that the person has not touched the evidence as there are many reasons why identifiable latent prints are not always left behind.

A. Preservation of Evidence

1. It is of the utmost importance to protect latent print evidence from careless handling and improper packaging that may damage latent prints and render them unsuitable for comparison. When feasible, it is recommended to superglue non-porous items prior to laboratory submission in order to protect latent prints from being damaged when transporting. This practice helps to yield better quality latent prints which can lead to more identifications.
2. When articles of evidentiary value are to be submitted for latent print processing, they should be handled as little as possible. These articles should be touched in areas least likely to retain identifiable latent prints, such as where the surface is of rough texture or on the edges or corners.
3. While wearing gloves or using a handkerchief is highly recommended when picking up items of evidence, any unnecessary contact should be avoided. Although this method of handling evidence should prevent leaving additional latent prints on an item, the gloves or cloth used may destroy any latent prints that were originally present unless great care is exercised.

CAUTION — It is possible to sweat through gloves and deposit latent prints while wearing disposable gloves (e.g. latex, nitrile, etc.). Disposable gloves can also leave deposits that can interfere with latent print development when certain development techniques are used.

4. When packaging evidence, care should be taken to prevent damage to any latent prints. Sealing in a paper bag, cardboard box, or an envelope are acceptable ways of securing evidence. A plastic bag should not be used as a packaging container.

Note: Tape with exposed adhesive surfaces should be placed on plastic or wax paper, and then placed in a cardboard box. If a cardboard box is not available, a paper bag may be used.

5. If an item is to be submitted for both drug and fingerprint analysis, the drug evidence (e.g. powder, tablets, vegetation) and the container (e.g. paper bag, plastic bag, box) shall be separated prior to submission to the laboratory. This separated evidence shall be packaged and submitted as individual sub-items. (See PEB-01, *Submission of Drugs/Controlled Substances*)
6. Due to extremely low success rates, the Laboratory will not examine cartridges or cartridge cases for the presence of fingerprints except in extenuating circumstances with the approval of the Laboratory Manager or Unit Supervisor.
7. Evidence bearing latent print(s) that cannot be removed from the scene for submission to the laboratory should be photographed prior to lifting with and without a scale in the picture.
8. Lifted prints should be placed on a backer which will contrast with the color of powder that was used. **The use of clear backed fingerprint lifts and the use of white or fluorescent powders are strongly discouraged.**

B. **Digital Photography of Latent Prints**

When latent prints are photographed for comparison purposes using a digital camera the following special considerations should be addressed.

1. A scale should **ALWAYS** be included in the photograph.
2. If possible, the camera should be set at **Aperture Priority (A)** to control the depth of field when taking comparison quality photographs. A tripod should be used. If a tripod cannot be used, then the shutter speed should be set at 1/60 of a second to prevent blurriness from movement.

- a. For flat surfaces, a smaller f-stop number (f/2.4 or f/4) is recommended.
 - b. For curved/rounded surfaces, a larger f-stop number (at least f/16 or f/22) is recommended.
3. Images should be captured at the highest resolution setting available on the camera, and every effort should be made to achieve a minimum resolution of 1000 pixels per inch (ppi).
- a. When using a digital Single Lens Reflex (SLR) camera with interchangeable lenses, 1000 ppi resolution should be easily obtained by filling the entire frame with the latent print to be photographed (include a scale).
 - b. A larger image, such as a palm print or foot print, may need to be photographed in sections to achieve a resolution of 1000 ppi.

Note: Check your camera specifications for accurate resolution.

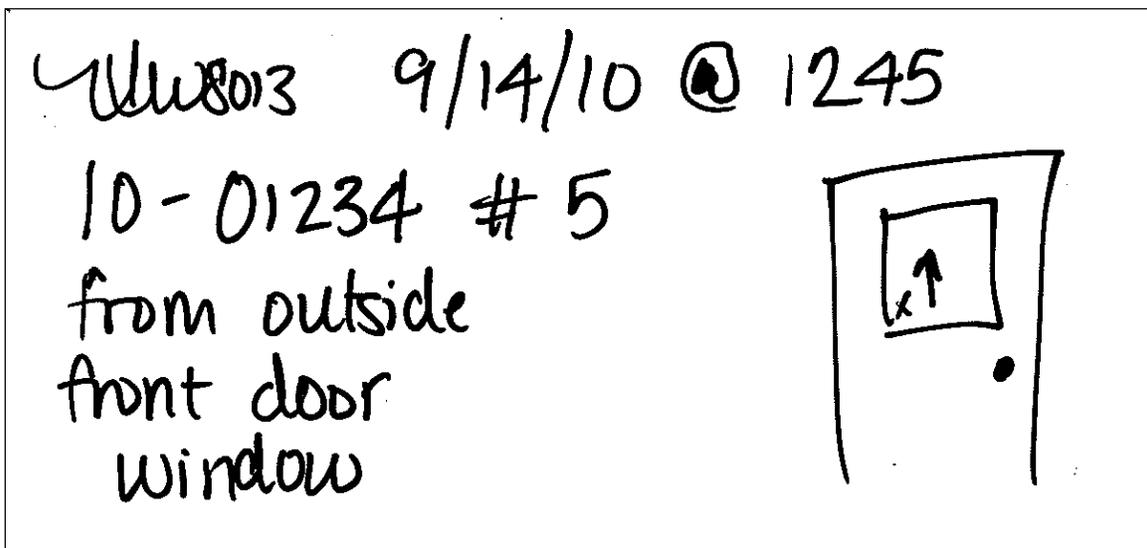
4. Images should be captured, stored, and transmitted without compression or with lossless compression.
- a. Examples of common file formats that meet this requirement are TIFF, RAW, and BMP. TIFF is the preferred file format for submission of latent print digital images to the laboratory for examination.
 - b. When an image is captured in a RAW format (such as NEF), it may be necessary to convert the file to TIFF or BMP format prior to submission. The laboratory may not have the capability to view that particular RAW format.
 - c. JPG (jpeg) is a lossy compression file format that can result in pixels being altered in the image. Therefore, it should **NOT** be used to capture a latent print image for comparison.
5. Agencies may have to prove that the digital images have not been altered prior to submission to the laboratory. Agencies **MUST** have adequate policies and documentation procedures in place to meet this requirement.
6. If there are any questions as to whether your digital camera can achieve 1000 ppi in an uncompressed format, you should revert to film photography and contact the Latent Print Unit of your regional Indiana State Police Laboratory for evaluation of your camera.

C. **Marking of Evidence**

1. The outside packaging of all evidence shall be marked with the contributing agency's name, case number, and item number. The container shall be

properly sealed and the initials of the person who sealed the evidence shall be written so they are partially on the seal and partially on the container. When possible, the container should be marked prior to placing the evidence inside to prevent damage to latent prints during the marking process.

2. Latent prints that have been lifted shall be marked on the back of the lifter and sealed in a marked envelope.
 - a. **Labeling Lifts** – The following information should be included on the back of each lift:
 - Agency case number
 - Item number
 - Date the evidence was collected
 - Written description of item (including inside or outside surface location)
 - Sketch of the item with the location of the print indicated
 - Direction/orientation of the print on the object
 - Initials of the lifting officer



D. **Submission of Latent Print Evidence**

1. Lifts, photographs, and/or items to be processed for latent prints should be submitted in person or shipped by commercial delivery service with traceable shipping to the appropriate regional laboratory.
2. The number of pieces of evidence inside an item container should be listed on the description line on Request for Laboratory Examination form (629). For example, the item description should read, "Sealed manila envelope containing 7 lifts with latent prints."

3. With investigations where there are suspects but no fingerprint exemplars submitted, the suspects' names and **dates of birth are required** to search for fingerprint cards from the Indiana State Police Records Division.
4. With investigations where there are no known suspects, any fingerprints recovered should be delivered to a regional laboratory to determine suitability for entry into the Indiana State Police Automated Fingerprint Identification System (AFIS) and the Federal Bureau of Investigation's Next Generation Identification System (NGI). Any latent prints submitted for AFIS/NGI entry should be accompanied by elimination exemplars. If known, it is recommended to include the race, sex and geographic area of a potential suspect for an AFIS/NGI search.

E. Additional Information Needed

1. Many times, evidence submitted for latent print examination will have additional requests for examination (e.g. Firearms, DNA, or Forensic Documents). If more than one examination is requested on an item of evidence, the Request for Laboratory Examination should indicate which examination is most important to the case. The analysts will then work with each other to conduct the examinations.
2. If evidence may have been exposed to adverse elements (e.g. heavy dew, rain, or snow), this should be noted on the Request for Laboratory Examination. This is very important as it will aid the analyst in determining what type of procedure should be used in processing the evidence for latent prints.
3. If an item of evidence has been previously processed prior to submission to the laboratory (e.g. processed with powder, superglue fumed, processed with ninhydrin, etc.), please indicate this on the Request for Laboratory Examination near the item description. This will assist the analyst in determining what remaining processing should be used on the evidence item in the laboratory.

F. Comparison Exemplars

1. If any suspects are known to the investigator, clear inked major case prints of the suspects should be submitted.
 - a. Major case prints are the complete ink recording of all the ridge detail on the fingers, palms, sides of palms and fingers, and the tips of fingers. Several sheets of paper should be used to record a complete set of major case prints; each sheet of paper should be marked for identification. Additional assistance in taking major case prints may be obtained from an analyst in the Latent Print Identification Unit or an Indiana State Police District Crime Scene Investigator.

2. For elimination purposes, submit inked major case prints of any individuals who may have legitimately handled the evidence, whether it was before or after the crime was committed. Include inked major case prints of any investigators who may have touched the evidence. Elimination exemplars prevent the unnecessary entry of latent prints into the Automated Fingerprint Identification System (AFIS).
3. Should the lifting officer accidentally deposit his/her fingerprints on the edges of a lift, he/she should place an "X" across his/her fingerprints with his/her initials.
4. If an original ten print card cannot be submitted as evidence, photocopies will be acceptable, provided the copies are clear.
5. Because major case prints require several sheets of paper for one person, the major case prints for one person should be packaged as one item. DO NOT package major case prints of multiple persons as one item.
6. Fingerprint exemplars of different individuals should be packaged in separate envelopes and submitted as separate items.

G. Explanation of Certificate of Analysis

Results are most often reported out using a boilerplate wording along with a case specific table, including the comparison results, at the end of the report. The following are examples of the boilerplates reported on the Certificate of Analysis and what each result means:

1. The non-exemplar items listed above were examined for the presence of latent prints. No latent prints suitable for comparison purposes were developed or observed; therefore, no comparisons could be performed.
This means any latent prints developed or observed on the evidence were of too low quality for comparisons to be conducted.
2. All non-exemplar items listed above were examined for the presence of latent prints. All latent prints suitable for comparison purposes were preserved by digital imaging.
The latent prints suitable for comparison purposes were compared to any submitted exemplars listed above, any exemplars obtained from the Indiana State Police Archive, and any exemplars obtained as a result of searches in the Indiana State Police Automated Fingerprint Identification System (AFIS) and the Next Generation Identification System (NGI).
Any unidentified latent print of suitable quality was entered into AFIS and NGI. If a latent print was entered into AFIS and NGI with no identification made, you will be notified if an identification is made in the future.
Conclusions are based upon the friction ridge skin depicted in the exemplars; the names on the exemplars are reported below. An inconclusive result is the determination by an examiner that there is neither sufficient

agreement to identify, nor sufficient disagreement to exclude. In the event of an inconclusive result, clear and complete major case prints should be submitted for further comparison, unless otherwise noted. Please contact the reporting analyst with any questions regarding this case.

This means latent prints of value were developed and/or observed on the evidence and comparisons were conducted. Below is an example report table including different conclusions:

Examination Results:

Item 001 - No latents of value

Item 002 - Latent 002A / Not AFIS Quality
Comparison Results: Excluded from John Doe and Jane Doe

Item 002 - Latent 002B / Not AFIS Quality
Comparison Results: Inconclusive to John Doe and Jane Doe

Item 002 - Latent 002C
Comparison Results: Identified to Jane Doe

Item 002 - Latent 002D / Not AFIS Quality
Comparison Results: Inconclusive to Jane Doe / Excluded from John Doe

3. All non-exemplar items listed above were previously examined for the presence of latent prints. All latent prints suitable for comparison purposes were preserved by digital imaging.

As the result of a previous entry in the Indiana State Police Automated Fingerprint Identification System (AFIS) or the Next Generation Identification System (NGI), the unidentified latent prints suitable for comparison purposes were compared to exemplars obtained from the Indiana State Police Archive or the NGI database.

Conclusions are based upon the friction ridge skin depicted in the exemplars; the names on the exemplars are reported below. An inconclusive result is the determination by an examiner that there is neither sufficient agreement to identify, nor sufficient disagreement to exclude. In the event of an inconclusive result, clear and complete major case prints should be submitted for further comparison, unless otherwise noted. Please contact the reporting analyst with any questions regarding this case.

This means that the previously entered latent print(s) came back with a possible hit in the database; whether it be a latent to latent inquiry (LLI) or a tenprint to latent inquiry (TLI).

4. All non-exemplar items listed above were previously examined for the presence of latent prints. All latent prints suitable for comparison purposes were preserved by digital imaging.

The unidentified latent prints suitable for comparison purposes were compared to additional submitted exemplars listed above and any additional exemplars obtained from the Indiana State Police Archive.

Conclusions are based upon the friction ridge skin depicted in the exemplars; the names on the exemplars are reported below. An inconclusive result is the determination by an examiner that there is neither sufficient agreement to identify, nor sufficient disagreement to exclude. In the event of an inconclusive result, clear and complete major case prints should be submitted for further comparison, unless otherwise noted. Please contact the reporting analyst with any questions regarding this case.

This means that there were additional exemplars submitted or suspect/victim information given to conduct comparisons on previously developed or observed latent prints. A table similar to the one above (#2) would be included in the Certificate of Analysis.

5. All post-mortem items listed above were examined for the presence of impressions or areas suitable for obtaining impressions. All impressions suitable for comparison purposes were preserved by digital imaging.

The post-mortem impressions suitable for comparison purposes were compared to any submitted exemplars listed above, any exemplars obtained from the Indiana State Police Archive, and any exemplars obtained as a result of searches in the Indiana State Police Automated Fingerprint Identification System (AFIS) and the Next Generation Identification System (NGI).

Any unidentified impressions of suitable quality were entered into AFIS and NGI. If impressions were entered into AFIS and NGI with no identification made, you will be notified if an identification is made in the future.

Conclusions are based upon the friction ridge skin depicted in the exemplars; the names on the exemplars are reported below. An inconclusive result is the determination by an examiner that there is neither sufficient agreement to identify, nor sufficient disagreement to exclude. In the event of an inconclusive result, clear and complete major case prints should be submitted for further comparison, unless otherwise noted. Please contact the reporting analyst with any questions regarding this case.

This means that the latent prints submitted were considered post mortem and comparisons were conducted to submitted exemplars or exemplars from the database.

H. Explanation of Conclusions

Below are examples of conclusions that may be reported on the Certificate of Analysis and what each conclusion means:

1. The print was excluded...
This means that the analyst has determined that the latent print **was not** made by the area of friction ridge skin depicted in the known exemplars.
2. The print was identified....
This means that the analyst has determined that the latent print and the known exemplar **were** made by the same individual/source.

3. The print was inconclusive...

This means the examiner determined that there is neither sufficient agreement to identify, nor sufficient disagreement to exclude.

I. **RUVIS and LASER/Alternate Light Source Call Out**

The Indiana State Police Laboratory currently has portable Reflective Ultra Violet Imaging System (RUVIS) and LASER/Alternate Light Sources in all four regional laboratories that can be taken directly to crime scenes to assist in searching for latent prints and/or foreign fibers. These light sources are available to any police agency in Indiana **24 hours a day**. A light source may be requested for any major crime scene, such as, but not limited to: homicides or sexual assaults. A light source may be requested Monday through Friday, 8:00 a.m. to 4:30 p.m., by calling the Regional Laboratory Manager, or after normal business hours by contacting the Indiana State Police District Crime Scene Investigator.

For questions or consultation, contact the appropriate laboratory or district crime scene investigator.

Indianapolis Regional Laboratory
550 West 16th Street, Suite C
Indianapolis, IN 46202
(317) 921-5300 or (866) 855-2840
District 52-CSI: (800) 582-8440

Fort Wayne Regional Laboratory
5811 Ellison Road
Fort Wayne, IN 46804
(260) 436-7522
District 22-CSI: (800) 552-0976

Evansville Regional Laboratory
19411 Highway 41 North
Evansville, IN 47725
(812) 867-3157
District 35-CSI: (800) 852-3970

Lowell Regional Laboratory
1550 East 181st Avenue
Lowell, IN 46356
(219) 696-1835
District 13-CSI: (800) 552-8917