Range of Conclusions – Firearms Analysis

Identification*: A sufficient correspondence of individual characteristics will lead the examiner to the conclusion that both items (evidence and tests) originated from the same source.

Inconclusive: An insufficient correspondence of individual and/or class characteristics will lead the examiner to the conclusion that no identification or elimination could be made with respect to the items examined.

Elimination: A disagreement of class characteristics will lead the examiner to the conclusion that the items did not originate from the same source. In some instances, it may be possible to support a finding of elimination even though the class characteristics are similar when there is marked disagreement of individual characteristics.

Unsuitable: A lack of suitable microscopic characteristics will lead the examiner to the conclusion that the items are unsuitable for identification.

Insufficient: Examiners may render an opinion that markings on an item are insufficient when:

An item that has discernible class characteristics but no individual characteristics.

An item that does not exhibit class characteristics and has few individual characteristics of such poor quality that precludes an examiner from rendering an opinion.

The examiner cannot determine if markings on an item were made by a firearm during the firing process.

The examiner cannot determine if markings are individual or subclass.

***** The identification of cartridge case/bullet toolmarks is made to the practical, not absolute, exclusion of all other firearms. This is because it is not possible to examine all firearms in the world, a prerequisite for absolute certainty. The conclusion that sufficient agreement for identification exists between toolmarks means that the likelihood that another firearm could have made the questioned toolmarks is so remote as to be considered a practical impossibility.

Note: The phrase "practical impossibility," which currently cannot be expressed in mathematical terms, describes an event that has an extremely small probability of occurring in theory, but which empirical testing and experience has shown will not occur. In the context of firearm and toolmarks, "practical impossibility" means that based on:

- Extensive empirical research and validation studies that have been conducted in the field

AND

- The cumulative results of training and the casework examinations that have either been performed, peer reviewed, or published in a peer-reviewed forensic journal

No tools other than those identified in a particular case will be found that produce marks exhibiting sufficient agreement for identification.