



**Quality Division Use Only**

Quality Tracking #:	2018-085	Classification:	Corrective Action
Non-Conformance Level:	Class I	Section:	Biology/DNA
Date of Discovery:	08/19/18	Date of Incident:	07/20/17

Forensic Case Number(s), if applicable:	Agency Case Number(s), if applicable:
2017-11784 2017-23049 2018-07564 2017-12207 2017-23121 2018-02397 2018-00192 2017-02308 2017-21078 2016-01773 2016-10168 2016-04399 2016-05903 2015-07740	077345717 155637117 058553218 072266217 146816017 017026718 163654917 013610517 141742917 009832516 062026216 032617216 044083716 064526915

**Description of Non-conformance:**

A Forensic Biology analyst made an incorrect deduction at one locus. The DNA profile of the foreign contributor to the vaginal swabs in case 2017-11784 was deduced; however, the deduction did not properly account for an allele that was below the laboratory's validated stochastic threshold at the D2S1348 locus. The incorrect deduction was discovered when a known reference sample was submitted to the laboratory for comparison to case 2017-11784.

**Additional Information/Follow-Up:**

A report was issued by the Texas Forensic Science Commission in July 2018 that addressed complaint 17.04. In it the panel reported observations of inadequacies in the HFSC training program and recommended HFSC "review a representative sample of DNA mixture casework for newly qualified analysts to ensure protocols are being applied appropriately". Therefore, in part due to the TFSC report and in part due to the incorrect deduction made in 2017-11784, a review of casework that contained deductions written by the original analyst of case 2017-11784 was conducted. This review encompassed concerns raised by TFSC as well as the concern that led to the incorrect deduction in 2017-11784.

A query of cases was created using the CODIS software to identify any cases that had the source ID listed as "no" that had been entered by the analyst from January 2017 to October 30, 2018. There were 92 cases identified and they spanned the following specimen categories: Forensic Unknown, Partial or Mixture. These cases were reviewed to determine if they included any deductions and, if so, a review of the deduction was performed to determine if any modifications were needed.

These cases were selected because they were entered into CODIS and had the greatest risk of being entered incorrectly and thus leading to the potential for a missed CODIS hit.

An additional query was then created, again using the CODIS software to identify any cases that had the source ID listed as "no" that had been entered by the analyst from May 1, 2016 (deductions became permitted by the Forensic Biology SOP in May 2016) to December 31, 2018. There were 21 cases identified. All of these cases which



utilized either the Identifiler Plus and GlobalFiler chemistries were reviewed by the DNA Interpretation Supervisor (at the time) in consultation with the Technical Leader (at the time) and the Biology Quality Specialist (at the time).

**Summary of Root Cause Analysis:**

Note: Incidents are documented for tracking purposes and trend analysis. Root Cause Analysis is not required for incidents.

There were several factors that contributed to this nonconformance: the analyst's training program with respect to deductions, the lack of a formal competency test when the Forensic Biology section first implemented mixture deductions and a failure on the laboratory's part to subject all reports by this analyst to a technical review by section management when he was newly authorized at HFSC.

The original analyst of case 2017-11784 had previous experience from another Forensic Biology laboratory and therefore had a modified training program. In hindsight, HFSC acknowledges that the modified training program that the analyst received did not require demonstration of his understanding of the laboratory's stochastic threshold.

When the Forensic Biology section first implemented mixture deductions, the SOP provided guidelines, but no formal competency test was provided. Therefore, although the expectation was for staff to adhere to the guidelines, there was no mechanism in place to demonstrate a clear understanding of said guidelines. The SOP regarding deduction guidelines has since been enhanced to provide more restrictions and decrease reliance upon analyst discretion when interpreting and deducing mixtures. All interpreting analysts (including the original analyst of case 2017-11784) have now also been given an opportunity to demonstrate their ability to conservatively deduce. The analysts met routinely to discuss management's expectations regarding mixture deductions, multiple case examples were highlighted, and a quiz was then completed.

Lastly, it was not practice for Forensic Biology section management to technically review the work of newly authorized interpreting analysts. Such a practice would likely have positioned management to ensure consistency in mixture deductions in real-time. It is now practice for Forensic Biology section management to technically review the first fifty cases drafted by newly authorized interpreting analysts with a potential to review more if warranted. As of May 2022 this analyst is no longer employed at HFSC.



**Actions Taken:**

An amended report was issued for case 2017-11784 with the statement "This report has been amended to reflect an update to the deduction for item 1.1.1. Please refer to Quality Report 2018-085." and the aforementioned locus was omitted from the allele chart. The CODIS entry was also amended by omitting the aforementioned locus. Amended reports were issued for the following cases identified through the case audit and the amended report statement referenced Quality Report 2018-085: 2017-23049, 2018-07564, 2017-12207, 2017-23121, 2018-02397, 2018-00192, 2017-02308, 2017-21078, 2016-01773, 2016-10168, 2016-04399, 2016-05903 and 2015-07740. The Forensic Biology section has also implemented several quality control measures to facilitate the review of historical deductions: as part of quality report 2018-066 the laboratory committed to reevaluating 4-person mixture interpretations because they were not supported by validation data, as part of quality report 2018-IA-09 1,280 historical CODIS profiles were reviewed and revised if appropriate, the section has implemented documented reviews of previously issued mixture deductions prior to the comparison of any submitted known reference samples, and it is Forensic Biology section practice to review cases prior to testimony and amend interpretations to be in alignment with the section's current interpretation guidelines. A review of cases has been or will be performed for all twenty-four interpreting analysts who were authoring DNA reports at that time. Eight of the analysts were identified as not having authored cases with mixture deductions between May 2016 to December 2018. To date, interpretation reviews for an additional seven analysts have been conducted and documented in the following quality reports: 2018-094, 2018-109, 2019-023, 2019-057, 2020-031 pending as of 08/03/22, 2021-064 pending as of 08/03/22 and 2022-003 pending as of 08/03/22. A review of casework for an additional three analysts was performed and no concerns or issues were noted. A review of the six remaining analysts will also be performed. While the original decision was to include the results of all case file reviews within this quality report, instead this quality report will be closed, and subsequent reviews will be tracked in a separate quality report (referencing this quality report) or in a follow-up workflow depending on if report amendments are required.

**Section Manager:** Courtney Head **Date:** 08/01/22  
**Division Director:** Amy Castillo **Date:** 08/02/22

**Incidents or Corrective Actions that involve the Biology/DNA section are reviewed by the Technical Leader and CODIS Administrator.**

**Technical Leader:** Cheron Maxwell **Date:** 07/26/2022  
**CODIS Administrator:** Jennifer Clay **Date:** 07/28/2022

**Quality Director:** Erika Ziemak **Date Closed:** 08/03/22