



Quality Division Use Only			
Quality Tracking #:	2024-004	Classification:	Incident
Risk Level:	Low	Section:	Seized Drugs
Date of Discovery:	02/28/24	Date of Incident:	02/28/24

Forensic Case Number(s), if applicable:	Agency Case Number(s), if applicable:
N/A	N/A

Description of Nonconformance:
 During the annual external calibration of the Seized Drugs section balances, one of the analytical balances did not pass the "as found" check.

Additional Information/Follow-Up:
 The uncertainty of measurement (UM) for weight determinations is evaluated on an annual basis for all types of balances used in the Seized Drugs section. As part of this evaluation, the acceptable weight range for each balance and corresponding check weight is determined. The UM study also includes an extensive performance check incorporating deviation detected in the balance’s performance, which is factored into the determination of the acceptable weight range. This range establishes the threshold for when the section must troubleshoot a balance or remove it from service. The balances are also calibrated annually by an accredited calibration vendor in accordance with HFSC’s calibration program to ensure the balances are in optimal working condition. The UM study, external calibration, and routine internal checks are integral process components that ensure the correct functionality of the balances and assess their suitability for use in casework.

During the internal check on 2/26/24, the weight readings for analytical balance 4 (AB4) found by a seized drug analyst were within the acceptable range. Casework continued as normal. On 2/28/24, the balance was checked by an external service technician as part of the annual calibration. The balances are checked both before (as found) any calibration services have been performed on a balance and after (as left). During the “as found” check of AB4, the linearity of the balance readings did not conform to the vendor’s stringent tolerance ranges and the balance was subsequently calibrated by the service technician. The balance passed the post-calibration “as left” check. Upon review of the balance calibration certificate provided by the external vendor, the balance was pulled from service in accordance with section SOPs. The Seized Drugs manager performed another internal balance check on 2/29/24 and the weight readings obtained were within the acceptable range found during the UM study.

The purpose of the external balance calibration checks is to ensure optimal working condition of a balance by catching shifts in performance before they have a technical impact to casework. The calibration service provider checks the balance based on stringent manufacturer-determined tolerance values. According to the calibration service provider, manufacturer tolerances ensure that equipment meets manufacturer specifications and do not consider user-specific process requirements. The balance tolerances determined by the manufacturer and used in the calibration service provider’s checks are significantly more stringent than the Seized Drugs section’s requirements. The deviation reported by the calibration vendor’s check of AB4 was enough to warrant calibration



of the balance, but not so significant that the validity of the measurements taken by the balance are in question due to the Seized Drugs section's conservative measurement uncertainty reporting. The deviation in individual measurements that could be caused by the drifted linearity documented in the "as found" check is already encompassed by the section's UM reporting requirements.

The linearity tolerance required of the calibration vendor's check is very narrow with the purpose of ensuring the balance is operating at peak performance. The tolerance of the linearity of the balance required of the calibration vendor's check is significantly more stringent than the acceptance range allowed by the Seized Drugs section's UM study. The acceptable weight range for balance checks determined in the study is $\pm 0.0005\text{g}$. This range is calculated using many measurements taken by many analysts and is used to monitor deviation in the balance's performance. Measurements outside of this range during an internal check would deem the balance no longer fit for casework. All individual measurements obtained during the external vendor's "as found" check were within this acceptable weight range, and the balance passed all internal checks between this and the previous calibration.

Summary of Root Cause Analysis:

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

N/A

Actions Taken:

After review of the calibration certificate left by the external vendor on 2/28/24, AB4 was taken out of service until the impact on casework conducted using this balance could be determined by section management and the Quality Division.

The internal checks performed by the Seized Drugs section evaluate the balance's suitability for casework, while the external vendor's check evaluates for optimal working condition of the balance. The balance check logs for AB4 were reviewed and the balance passed all internal checks including those immediately prior and following the external calibration.

While the balance did not pass the calibration vendor's "as found" check and was removed from service, the Quality Division and section determined that there was no technical impact to results reported in casework. The calibration conducted on the balance has stringent tolerances that are narrower than required for accurate reporting in casework. All individual measurements obtained during the external vendor's "as found" check were within the section's calculated acceptable weight range, and the balance passed all internal checks between this and the previous calibration. Because no technical impact was identified, AB4 was internally checked on 3/18/24 and 3/19/24 and was put back into service on 3/19/24.

Section Manager: James Miller

Date: 04/22/24

Division Director: Amy Castillo

Date: 04/24/24



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

Technical Leader: N/A

Date: _____

CODIS Administrator: N/A

Date: _____

Quality Director: Jackeline Moral

Date Closed: 05/06/24