

C. THE 5 $\alpha$ -ANDROSTANEDIOL  $^{13}\text{C}$ -VALUES REPORTED BY LNDD ARE INACCURATE

With the 5 $\alpha$ Adiol - 5 $\beta$ Pdiol measurement being significantly at odds with all of the other measurements in this case, the Review Board must consider the cause of this disparate measurement, which is inconsistent with every other measurement in the CIR portion of the analysis. It is submitted that the explanation for this erroneous measurement can be found in LNDD's calculation of incorrect values for 5 $\alpha$ Adiol, as evidenced by an examination of the negative control urine  $\delta^{13}\text{C}$ -values for that metabolite. Simply put, LNDD's  $\delta^{13}\text{C}$ -values for 5 $\alpha$ Adiol for the negative control urine show that their equipment was, for some unexplained reason, measuring excessively low  $\delta^{13}\text{C}$ -values for 5 $\alpha$ Adiol.

Published data provides guidance for expected  $\delta^{13}\text{C}$ -values for 5 $\alpha$ Adiol for **negative** control urines and for **positive** control urines. See Aguilera et al., Performance Characteristics of a Carbon isotope Ratio Method for detecting Doping with Testosterone Based on Urine Diols: Controls and Athletes with Elevated Testosterone/Epitestosterone Ratios, 47 *Clinical Chemistry* 292, 296 Table 3 (2001) [attached hereto as Exhibit 4], showing that mean  $\delta^{13}\text{C}$ -values for 73 negative control urines for 5 $\alpha$ Adiol was -26.35‰, with a maximum of -24.55‰ and a minimum of -27.89‰. See also, Maitre, Urinary Analysis of Four Testosterone Metabolites and Pregandiol by Gas Chromatography-Combustion-Isotope Ratio Mass Spectrometry After Oral Administration of Testosterone, *supra*, showing that mean  $\delta^{13}\text{C}$ -values for negative control urines for 5 $\alpha$ Adiol was -24.3‰ ( $\pm 0.4$ ‰). In contrast to those figures, LNDD measured  $\delta^{13}\text{C}$ -values for negative control urines for 5 $\alpha$ Adiol in the Landis case of -28.40‰ on the "A" sample (See