Idaho State Police

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To: All Idaho Prosecuting Attorneys, County Sheriffs, and Police Chiefs

From: Major Ralph Powell, ISP Police Services Commander

Subject: ISP Forensic Services Lifeloc FC20 Clarification

Date: March 23, 2010

This correspondence is to address misconceptions within the legal community in Idaho regarding a recently introduced breath testing instrument. This instrument, the Lifeloc FC20 portable breath testing instrument, is United States Department of Transportation (USDOT) and National Highway Traffic Safety Administration (NHTSA) tested and approved. It is intended for professional law enforcement use. To be placed on USDOT's conforming product list, an instrument must comply with rigorous specifications. The major misunderstanding is that all readings obtained from the FC20 are precise within ±5% based on USDOT minimum technical specifications. In truth, USDOT merely certified that the FC20 precision was less than ±5%, not that it was ±5%.

In order to provide independent verification of the precision and associated measurement uncertainty (not to be confused with error) of the Lifeloc FC20, Idaho State Police Forensic Services (ISPFS) conducted a scientific study. Data was generated using five different FC20 instruments that were put into service at different times in the State of Idaho. Data was also obtained over the complete acceptable operational temperature range of the instrument (between 10 and 37 degrees Celsius). The scientists performing the study concluded that the readings obtained from the FC20 instrument are indeed more precise than the minimum criteria set by the USDOT (in order to be listed on the USDOT Conforming Products List).

The ISPFS validation study of precision is based on data obtained under controlled laboratory conditions. The following table provides the ISP Forensic Services Laboratory obtained precision data for the FC20. If it is assumed that proper breath sample was provided, the values may be used to adjust breath testing values for measurement uncertainty at the critical values of 0.04, 0.08, and 0.20 respectively.

ISP Forensic Services Scientists will reference and use the ISPFS validation percentages listed below for FC20 related cases. All instruments tested in this validation performed at or better than the following percentages.

0.04g/210L	0.08g/210L	0.20g/210L
±3.16%	±1.81%	±2.64%

It must be emphasized that the application of the percentages in the table results in a value **range**, both below and above the obtained value. An attorney wishing to provide a [+/-] value to a jury would multiply the uncertainty percentage (at the chosen prosecution level) by the breath instrument measured value. For example, if a Lifeloc FC20 case being prosecuted at the 0.080 level had a breath result of 0.084, the uncertainty percentage (1.81% or 0.0181) is multiplied by 0.084. The obtained number is then added to and subtracted from the instrument measured value (e.g. 0.084 x 0.0181 = [+/-] 0.00152).