# Idaho State Police

**Service since 1939**

**Colonel G. Jerry Russell**
**Director**

**C.L. "Butch" Otter**
**Governor**

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

**From:** Major Ralph Powell, ISP Police Services Commander

**Subject:** ISP Forensic Services "Uncertainty of Measurement" Reporting

**Date:** December 19, 2008

On September 8, 2008 the Idaho State Police Forensic Services Laboratories began adding wording to all ethyl alcohol concentration reports in conformance with our new accreditation standards. The reports now contain a disclaimer such as, "The reported ethyl alcohol concentration has been adjusted to account for the uncertainty of measurement calculation."

We are required by our national accrediting body to perform an uncertainty calculation in our casework and also required to disclose in the report that we have performed this calculation and applied it to the reported figure. We are accredited by ASCLD/LAB (American Society of Crime Laboratory Directors Laboratory Accreditation Board) to the ISO 17025 International Standard. We were one of the first laboratory systems in the country to seek and obtain this more difficult and prestigious accreditation last year. Prior to gaining the ISO 17025 accreditation, ISP Forensic Services had been an accredited laboratory through the ASCLD/LAB Legacy program since 1987.

In the report we are simply stating that we know scientifically that there is a level of uncertainty in every measurement. Sources contributing to the uncertainty include, but are not necessarily limited to, the reference standards and reference materials used, methods and equipment used, environmental conditions, properties and condition of the item being tested, and the operator. Because we know this uncertainty exists, we perform a calculation for it and subtract it out in favor of the defendant (we make the number more conservative).

In statistical terms, our "uncertainty number" is two standard deviations (which is a 95% confidence interval and meets the court requirement of being a generally accepted practice in the scientific community). The standard deviation calculation is a very small number (currently around 0.0022) and is always doubled (to provide two standard deviations). The doubled number is then subtracted from the laboratory measured number. On all analysis performed after September 8, 2008, the uncertainty number has been subtracted out of the lab measured number (the number you see on the lab report reflects the subtraction). It is also important to know that the reported value is truncated (e.g. 0.08 may actually be a 0.0899….). Truncating the figure makes it even more conservative. Our present uncertainty calculation would only affect laboratory determined values of 0.0800-0.0844 or 0.2000-0.2044, which would be reported as a 0.07 and 0.19 respectively.

To reiterate, the application of this calculation and truncation of the number always makes the reported figure more conservative.

If you should require further documentation or explanation, please contact the ISP Forensic Services Quality Manager, Matthew Gamette at 208-884-7217. If you need someone to testify to the scientific validity of the procedure or our accreditation requirements, we can certainly provide that service as well.