

GEORGIA BUREAU OF INVESTIGATION

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Beginning in November 2001, you may have noticed that the Division of Forensic Sciences (DOFS) Official Reports contained some new information. The most notable change is the addition of what is called uncertainty values. The Crime Laboratory uses analytical chemistry procedures that have been established and recognized throughout the country. As with all scientific techniques, there will be a range of results obtained if a single sample is tested multiple times. Each and every time that someone tests a sample, the numerical value obtained will be slightly different. This range is called the uncertainty of measurement. The values reported on DOFS Official Reports follow an industry standard of 95% confidence level (99% for blood alcohol determinations) that the true results will be within this range.

Proper scientific protocol and accreditation standards requires all DOFS Official Reports that have numerical values to include the measurement of uncertainty of those values. In addition, the United States Supreme Court ruled in *Kumho Tire Co. vs. Carmichael* that expert testimony that relied upon scientific testing include the instrument accuracy and error rates if applicable. This uncertainty of measurements has always existed but was not reported in the past. In order to comply with acceptable industry standards, the DOFS started reporting the uncertainty values for all quantitative measurements by late Fall 2001. To ensure that the proper terminology and calculations were performed the laboratory contracted with an industry recognized Ph.D. statistician from Clemson University to help develop the uncertainty measurement protocol.

It is customary to report a percentage value. The laboratory understands your potential concerns about interpretation of percentages by non-scientists. However, effective January 1, 2002, DOFS Official Reports containing uncertainty values for blood alcohol determinations, as well as other toxicology drug values, will be reported as a +/- numerical value instead of a percentage value. This will enable non-scientists to quickly and accurately determine the uncertainty range without complex mathematical calculations. Any value within this range is a correct value and no one numerical number within this range is better than another numerical value.

Please note that this uncertainty range is not an "error" percentage, an error range, nor is it a margin of error in a result. It is a confidence level of where the "true" scientific value lies.

We appreciate your cooperation in our efforts to enhance the forensic services we provide to the criminal justice community of Georgia. If you have any questions, please contact the laboratory Deputy Director's office at 404-244-2787.