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## TECHNICAL NETWORK CONSULTING SERVICE®

### DUI: A CASE STUDY

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From Texas

There are numerous versions of the classic breathalyzer that are now in use by law enforcement agencies. The differences in the detection mechanisms, which will be discussed in another article, are significant. Regardless of these analytical concerns, the fact is that the results are only an estimate of the amount of alcohol actually present in any part of the person's body. Therein lies the problem with using data obtained by any breathalyzer for the determination of blood alcohol level.

An interesting case study allows us to examine in more detail these issues. The names and places have been changed but the facts are accurate. Although there are newer versions of the various breathalyzers on the market, most law enforcement agencies are still using the older models.

#### Case Study

According to Officer Jones's report (Case No. xxxx; 2007) he had Mr. Ansen step up to the Intoxilyzer 5000 and "...blow into the tube. He took a deep breath, and blew very hard into the mouthpiece. He had no problem making the tone go off, but only blew for about 3 seconds. I told him that the instrument didn't accept the sample, and he needed to blow again, but not so hard. He blew again, still pretty hard, but again for about 3 seconds. I told him it still didn't take the sample. I explained to him that he needed to blow consistently, not extremely hard and that he needed to blow for about 5-6 seconds. The third time the instrument accepted the sample..."

The guidelines developed by CMI, the manufacturer of the Intoxilyzer 5000, clearly state that a second breath test is required in order to verify the breath alcohol level. Officer Jones did not do the second test and could not determine, as required by the company, "If the second breath sample differs from the first by more than 0.02, then an air blank and a third breath sample will be automatically requested by the instrument".

There are problems with the machine that are well-known. The Intoxilyzer 5000 has a "slope" detector which is designed to detect the concentration of alcohol in the mouth, after filtering

out the readings of any interfering substances. However, the slope detector is flawed and variations occur due to the manner of blowing into the tube. This sampling error is the result of either hyperventilating before the test, or by overblowing into the chamber. Overblowing, as performed in the above test by Mr. Ansen, forces extra molecules of ethanol inside the chamber. Since Officer Jones never reset the Intoxilyzer 5000 or ran an air sample between the samples from Mr. Ansen, the slope detector most probably provided inaccurate data. Again, Officer Jones should have waited another 20 minutes and retested Mr. Ansen in order to verify the first test readout. Without a second usable breath sample and test, the initial result is inaccurate. This is the standard in other states, for example, Georgia, Idaho, and Arizona.

There are significant problems with the Intoxilyzer 5000 that render the data unacceptable by the scientific community:

- 1) The samples are not retained which would permit the retesting at a future time. The machine does have an adapter that is capable of doing this.
- 2) The computer program, stored on the EPRON, that determines the amount of alcohol in the breath, and then calculates a number to estimate the amount of alcohol in the blood, has never been published and has not been peer-reviewed by the scientific, medical, or legal community.
- 3) The Intoxilyzer 5000 cannot be internally calibrated by the police officer or anyone outside of the company itself. There is no way to know if the machine is working properly, other than to return it to the company.
- 4) There is no maintenance scheduled on the Intoxilyzer 5000 for its pressure switch that is used to accept a 'normal' blow.
- 5) Tests done by police officers are "concurrent calibration" tests and are not true "calibration" tests. They are nothing more than mere "reference" checks. Calibration testing can only be performed by Quality Assurance Specialists at the manufacturer (CMI).

In summary, the results obtained by Officer Jones were not accurate since he did not follow the guidelines required and since the machine itself has not been proven to be functioning properly.