National Patent Analytical Systems, Inc.

Explanation of the INVALID SAMPLE message and the DataMaster DMT

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Amended 2/6/12 (Text in *italics*)

Measurements of the alcohol concentration during breath sample delivery are taken every 250 milliseconds (4x per second). *For the purpose of evaluating the slope of the alcohol concentration curve, two consecutive ¼ second samples are averaged and the result is used.*

A "positive slope" is defined as a comparison of a 2 consecutive point average to the previous where the trend is not in the negative direction. *In order to be considered a negative slope, the change in consecutively compared averages must be greater than 0.001 in the negative direction. Any non-negative change as defined above is considered a positive slope.*

The message "INVALID SAMPLE" will be produced while the instrument detects at least the minimum rate of airflow during sample delivery if:

There are three consecutive comparisons of two point averages where the *slope is negative, as defined above,* after seeing first a minimum of six positive comparisons of two point averages.

Or

Any final result ≥ 0.060 g/210 l is less than 95% of any previous high reading during that successfully delivered sample.

Or

Any final result ≥ 0.003 g/210 l but < 0.060 g/210 l is lower than any previous high reading during that successfully delivered sample by at least 0.003 g/210l.

Explanation of SAMPLE ACCEPTANCE PARAMETERS for the DMT

A minimum flow rate as measured by the DMT must be 3 L/M.

The minimum sample volume delivered while achieving the minimum flow rate must be 1.5 liters.

The slope of the alcohol concentration curve must meet the following criteria at the point when the flow rate drops back below 3 L/M after having met the 1.5 liter total volume requirement:

The increase from the second to last 2 point average to the last (at the time the flow rate drops below 3 L/M) must be less than or equal to 0.001 g/210l and not a negative slope. In order to be considered a negative slope, the change in consecutively compared averages must be greater than 0.001 in the negative direction.

Therefore, in order to be a slope that will allow a sample to be accepted, the absolute value of the change between the final two 2 point averages must be 0.001 g/210l or less.