

## MINUTES FROM WHOLE EFFLUENT TOXICITY (WET) SUBCOMMITTEE MEETING

Subcommittee to The NELAC Institute's (TNI's) Proficiency Testing Board

Date: October 9, 2008

The meeting was called the order at 11:30 AM EST by RaeAnn Haynes, the elected Chair for this Subcommittee.

The Subcommittee members present were (in addition to the Chair) Faust Parker, Jim Pletl, Jeff Lowry, Chuck Wibby and Patrick Yellin. RaeAnn Haynes served to take minutes for this meeting.

### **Old Action Items:**

J Lowry sent the revised data summary and associated statistics. R Haynes did send the letter inviting EPA participation thru TNI. No response has been received. P Yellin agreed to contact the EPA folk directly to encourage them to participate.

### **Data Review:**

J.Lowry walked the committee through the statistics. The raw data was distributed earlier and a preliminary review was made by the committee in June. The data was re-grouped after feedback from Jim and Faust. The statistical analysis was recommended by Dan Tholen. The Wilcoxon test was applied to the data to compare separate methods across many providers. For example the Wilcoxon Rank-Sum Test calculation requires a P values of greater than 0.5 before the difference between of two methods is considered insignificant. So when the committee looked at the difference between 20 and 25 degrees for acute tests the Wilcoxon test indicated that we cannot conclude that the distribution of results are similar. J. Lowry took another approach using the student t test. The same data passes the student t test. Another way to look at the Wilcoxon data is a Rank Sum. Statically there appears to be differences in the results of the acute studies conducted at 20 and 25 degrees Celsius across PT providers. The limitation of the data may be the total number of data points collected.

F Parker suggested that both he and J Pletl know from experience that the temperature is not important to demonstrating capability. He suggested another approach is to simply specify one temperature (25 degrees) for all future tests. The subcommittee would propose using 25 degrees in acute studies because this is the temperature used for chronic tests, simplifying testing for labs to conduct both acute and chronic tests. This will have the added benefit of increasing the total number of data points for each PT test group. J Pletl agreed that the study results do not appear to be different between temperature across PT providers based on experience but was surprised that the statistical analysis indicated that the two temperatures were not similar. J. Pletl noted the measurement uncertainty for each test is unknown and that this uncertainty would play a role in any statistical evaluation of toxicity studies.

J Lowry looked at the data within a specific PT Provider and found that the study results are similar across temperatures for several different tests. Given that most labs use one PT provider per year this would justify use of one temperature in the acute PT studies. J Pletl said the standard deviation and assigned values are all we have for each study and we may be missing data that is important to the statistical analysis of these PT studies.

Some of the data was generated based on the original EPA program prior to privatization and it was hypothesized that this data may not be representative of data collected using the current PT program. J. Lowry in another analysis removed the EPA data for the Wilcoxon calculation across the two temperatures. The P value increased somewhat to  $P=0.43$  but did not get higher than 0.5 thereby still indicating that there is a difference based on temperature

across PT providers. J. Pletl commented that a straight forward statistical approach may not accurately reflect what we know from practice and experience.

**New Action Items:**

- R Haynes will address a letter to state coordinators asking for input about the consequences to state programs if the WET DMRQA is specified at 25 degrees. She will include P. Yellin and the committee on the review of the draft letter.
- J. Lowry asked about the status of the WET Table. R Haynes thought she had sent that Table to the committee. She will do that this week.

The next conference for this Subcommittee will be a face to face meeting on October 23, 2008 at 11:30 am EST by teleconference.