



STL

October 27, 2006

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Dear Mr. Laurent:

STL Sacramento was contacted by Omya Inc. (Omya) to develop a method for the quantitation of flotation reagent in aqueous media. STL has developed a method to measure the amount of flotation reagent in water. As documented, the method reliably quantifies each of the compounds found in the flotation reagent down to a limit of 50 micrograms per liter (parts per billion, or ppb). Below 50 ppb, the method can detect those compounds and quantify them as estimated values.

Enclosed is the current standard operating procedure (SOP) for the Liquid Chromatography with Tandem Mass Spectrometry (LC/MS/MS) method developed by STL for the four flotation reagent analytes of interest. STL has been performing LC/MS analyses for more than ten years. Our LC/MS/MS instrumentation frequently is applied to the analysis of explosives, Perchlorate, and chemical warfare degradate compounds in water and soil.

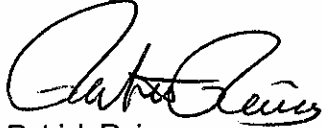
The data quality objectives outlined by Omya were for a method in which the Reporting Limit (RL), or Practical Quantitation Limit (PQL), would be below the Vermont health advisory (HA) of 126 ppb for the flotation reagent analytes in aqueous matrices. STL has developed a method for the quantitation of samples for Tall Oil Hydroxyethyl Imidazoline (IM), Tall Oil Amido Amine (TAA), Amine Acetate (DT for the trade name Duomeen-T), and Aminoethylethanolamine (AEEA) with a PQL of 50ppb for each of those four analytes. The PQLs were established based on a combination of client required action limits, evaluation of the analytical method and system performance, and analysis of blind spike performance evaluation (PE) samples. The accuracy and precision of the method was verified through the analysis of independently prepared PE samples. (A table of the comparison of the PE values versus the STL results was provided by Omya to STL only after STL submitted the results of its analyses.) The PE samples were formulated at three different concentrations that roughly corresponded to the HA, one-half of the HA, and one-quarter of the HA. The analyses indicated that the LC/MS/MS method STL developed routinely produces results that are within the acceptance criteria provided to STL of the true value for PE samples prepared close to and at approximately one-half of the HA, but outside the acceptance criteria provided to STL for the PE samples prepared at one-quarter of the HA (approximately 30 ppb).

STL developed calibration curves and performed Method Detection Limit (MDL) and Demonstration of Capability (DOC) studies that indicated there was sufficient instrument and method sensitivity to achieve a PQL well below the HA. Evaluations of instrument sensitivity and analyses of Continuing Calibration Verification (CCV) standards were performed to determine allowable instrument variability "drift" over time, beyond which corrective action must be performed. Based on all of the data, STL has established a PQL of 50ppb for each of the four analytes. However, low level calibration standards and sensitivity check standards are analyzed at levels 2-5 times below the PQL. The low level calibration and sensitivity check standards are evaluated for response and support reporting estimated results below the PQL. STL's evaluations of instrument sensitivity and analyses of CCV standards at or above the mid range of the quantitation range showed variability within +/-30%. The evaluations of instrument sensitivity and analyses of CCV standards at or below the PQL showed variability of greater than +/-30% but less than +/-50%. Therefore, CCV acceptance criteria have been set at +/- 50% for standards analyzed at or below the PQL and +/-30% for CCV standards analyzed at or above the mid range of the quantitation curve.

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If you have any questions regarding the method development, please contact Patrick Rainey at 916-374-4411. We appreciate the opportunity to serve you in your method development needs.

Sincerely,



Patrick Rainey
Technical Director
STL Sacramento



Pamela Schemmer
Quality Assurance Manager
STL Sacramento