McCampbell Analytical News for 2003 & 2004

In years 2003-2004 our laboratory achieved State of California certification for an extensive group of "Wet Chemical" tests. These include titrimetric methodologies like alkalinity & speciated chlorine, distillation followed by spectrophotometry such as cyanide, phenolics & ammonia, post-combustion analyses including TOC, Total Nitrogen & Total Sulfur, digestion followed by spectrophotometry such as Total Phosphorous & TKN, and a gamut of simpler tests including color, odor, TDS, MBAS, CTAS, Tannin & Lignin and UV 254 . Please see our Environmental Wet Chemistry section for more details. Our laboratory has attempted to be comprehensive within the environmental industry for these types of tests & will set up for new ones at a reasonable cost. We will also use methods published outside of the EPA & Standard Methods such as those for Cationic Surfactants & Hydrogen Peroxide as well as those published by the AOAC.

Another direction in which we expanded during the past two years has been the inclusion of food & beverage matrices to our already extensive pesticide testing abilities. Our State of California certification included CDFA (California Department of Food & Agriculture) performance evaluation tests and we now test all types of food and produce for pesticides and herbicides. Nonylphenol dispersant, Acrolein, & 3-Hydroxypropanal algaecides have recently been added to our pesticide capabilities. Refer to our Environmental Pesticide section target lists to view the over 300 compounds that we test. Again, new analytes can be added at reasonable cost.

In 2003-2004 we also began testing for bacteria, including Total Coliform, E Coli, Heterotrophs & Enterococci. Our lab automatically confirms Total Coliform positives with E Coli. In the upcoming two years you can expect to see MAI perform much more elaborate and diversified testing in this field.

Numberical criteria have not yet been established by the state of California for the evaluation of TPH (g /d /mo, etc.) contamination, but it is thought that either the internet published "TPH Criteria Working Group" or the "Massachusetts DEP" criteria will be adopted for this purpose. Although the two methods differ substantially in detail, both require bench chromatographic separation of aromatics from aliphatics & subsequent GC analysis of these fractions with quantitation over narrow carbon ranges. Our lab has successfully separated benzene thru PAH aromatics from hexane thru C35 aliphatics and we are able to routinely perform both the TPHCWG & the MA DEP methods.

Last but not least, we now have ICP-MS capabilities, having purchased a new Agilent 7500 cs . It is a thing of beauty. Our routine reporting limit for heavy metals is 0.5 ug / L (ppb), 0.05 for Hg, in water samples & we can go lower. We also now have Hg AFS (Atomic Fluorescence Spectroscopy) capability to 0.5 ppt.

Bon Journo,

Edward Hamilton, Lab Director for MAI