

To H.E. Dawson; c.c. C.O. Olesen

Date June 23/75

From C.O. Olesen

Ref.

Subject SDDC Method for Arsenic

During the last few months, standards for the SDDC method were made from the dilution of an atomic absorption standard (HARLECO 1000 p.p.m. As Standard). Since our results have to correlate with the federal assay office, we therefore, worked in conjunction with them for three to four weeks, to see if we could reproduce the results. During the course of these analyses it was finally brought to my attention that the Harleco standard had deteriorated from 1/3 to 1/2 of its original value. Therefore, some of the results that were reported were 33 - 50% higher than their actual value. Therefore our standards are now being prepared the same way as the federal government and which is also the acceptable method throughout the North American Continent.

Quote "Three - fourths of the reported results were within  $\pm 0.01$  p.p.m. of the known arsenic concentration. The individual laboratories reproduced their own results within 0.001 p.p.m. (American Public Health Association, 1965, Standard Methods for the examination of water and waste water. Twelfth Ed. N.Y., page 58.)"

The above quote stipulates that the chemistry of the SDDC Method can only detect 0.01 p.p.m. As and can be reproduced to  $\pm 0.001$  p.p.m. As. As to the degree of accuracy of the calibration curve between the limits of 0.01 - 0.02 p.p.m. As you can obtain up to a 50% error, therefore I feel that reporting 0.015 p.p.m. As or higher and readings that are lower than 0.015 p.p.m. As as less than 0.015 p.p.m. As would be adequate. If they are to be reported lower than 0.015 p.p.m. As we therefore can only report to 0.01 p.p.m. As because of the chemistry of this method.