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PAPER TITLE Assay Variations of Envir	onmental Samples caused by Different
Constructions of Standard	S _.
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ABSTRACT (See instructions overleaf)
When determining the quantity of a particular radionuclide contained in an
environmental sample, errors arise due to differences in geometry and specific
construction of the standard versus the sample. The difference is particularly acute
when the isotope of concern is a low energy beta emitter.

Environmental samples are assayed against commercially available standards of various constructions including anodized, electroplated, polymeric membrane, and filter paper. In order to cover a large range of beta energies C-14, Tc-99, Cs-137, and Sr-90 are investigated. Differences in assay results are discussed in terms of beta spectra and average beta energies. Substantial discrepancies are demonstrated when when improper standards are used for low energy beta assays.