

ACCELERATOR MASS SPECTROMETRY OF ACTINIDES. A.A. Marchetti, T.A. Brown, C.C. Cox, T.F. Hamilton, and R.E. Martinelli. Lawrence Livermore National Laboratory, 7000 East Ave., Livermore, CA 94550, USA

Accelerator mass spectrometry (AMS) is a sensitive and robust technique well suited for the quantification of long-lived radioisotopes down to the million-atom level. We have developed a routine AMS capability for measurement of actinide concentrations and isotopic ratios in environmental samples, including soils, sediments, waters, tissue samples, and human urine. AMS provides a high rejection of interferences and a low susceptibility to matrix components. These advantages reduce the demands on the sample preparation chemistry, allowing a high throughput, cost-effective method with rapid turn around of results. We will report on the status of our developments, and our AMS measurements to date of ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{237}Np and ^{236}U concentrations and ratios in environmental samples.

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