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TITLE: Intercalibration of selected anthropogenic radionuclides for the GEOTRACES Program

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ABSTRACT:

As part of the GEOTRACES Program, six laboratories participated in an intercalibration exercise on several anthropogenic radionuclides of interest. The effort was successful for $^{239,240}\text{Pu}$ activity, $^{240}\text{Pu}/^{239}\text{Pu}$ isotope ratio, and ^{137}Cs activity measured in filtered seawater samples from the Bermuda Atlantic Time Series station (BATS) and a site on the continental slope of the Northeastern U.S. A limited number of analyses were reported for ^{237}Np , ^{241}Am , ^{90}Sr , and ^{238}Pu in filtered seawater. Intercalibration of any of the isotopes of interest in filtered particulate matter was unsuccessful due to insufficient size of the samples distributed. Methods used were based on traditional radio?counting techniques and inductively coupled plasma mass spectrometry (ICP?MS). Although the majority of analyses were performed on samples ? 60 L, one lab demonstrated the ability to analyze several of the anthropogenic radionuclides on 10?20 L sample volumes using ICP?MS.

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