

Abstract Submitted  
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**Fast-Neutron Activation of Long-Lived Nuclides in Natural Pb D.**

HIKON, V.E. GUISEPPE, University of South Dakota, S.R. ELLIOTT, Los Alamos National Laboratory — We observe the production of the long-lived nuclide  $^{207}\text{Bi}$  and supported nuclides  $^{202}\text{Tl}$  and  $^{194}\text{Au}$  in a sample of Pb due to high-energy neutron interactions using a neutron beam at the Los Alamos Neutron Science Center. The activated sample was counted by a Ge detector to measure the amount of radioactive nuclides present. These nuclides are critical in understanding potential backgrounds in low background experiments utilizing large amounts of Pb shielding due to cosmogenic neutron interactions in the Pb while residing on the Earth's surface. We present the measured production and a predicted cosmogenic production rate based on a measured cosmic-ray neutron flux.

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