

COMPARISON OF INTERNALLY DEPOSITED RADIONUCLIDES' SIGNIFICANT PRESENCE IN PUBLIC VOLUNTEERS AS MEASURED BY LUNG AND WHOLE BODY COUNTER, BEFORE AND AFTER THE WIPP 2014 RADIATION EVENT

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The internal dosimetry (ID) laboratory at the Carlsbad Environmental Monitoring and Research Center (CEMRC) has a dedicated, high efficiency Lung and Whole Body Counting (LWBC) facility to perform *in vivo* measurements of internally deposited radionuclides in humans. The CEMRC ID LWBC facility is located in Carlsbad, NM, approximately 33 miles (53 km) northwest of the Waste Isolation Pilot Plant (WIPP) site. The LWBC facility has been performing lung and whole body *in vivo* radiobioassay services since 1997 for public volunteers, living within a 100-mile radius of the WIPP, through a program entitled "Lie Down and Be Counted (LDBC)". The LWBC facility has also been providing support to the WIPP and other contract agencies by conducting *in vivo* radio-bioassays for radiation workers on an on-going basis since 1999. On February 14, 2014 there was an underground radiation incidence at the WIPP site resulting in a small release of radioactive contamination into the environment. In response to this event, the LWBC facility performed immediate *in vivo* analyses for LDBC volunteers. During this period we also performed in-vivo analyses on the radiation workers from the WIPP site, looking specifically for the presence of Pu isotopes along with Am, Cs and Co radionuclides. To determine whether or not an activity has been significantly detected in a particular person, the Decision Level ( $L_c$ ) parameter is compared with the Net Count Rate. Net Count Rate > Decision Limit provides 95% significant presence. Comparison of the percentage of number of volunteers with significant presence before and after the WIPP incidence and results are discussed for public data only.