

## EXTERNAL RADIATION SUMMARY -- PAGE-TROWBRIDGE RANCH LANDFILL

### Radioactive Materials Summary:

The University of Arizona (UA) placed radioactive waste into individual cells of varying sizes in Site B of the Page-Trowbridge Ranch Landfill from 1962 to 1986. At the time of each disposal, the radioactive waste cell was backfilled with more than 4 feet of earth. From 1962, the waste was disposed in the various containers collected from research laboratories. Disposal in 55-gallon drums was initiated in early 1985.

The total activity remaining in Site B as of January 31, 2001 is 9.003 curies (Ci), of which 6.690 Ci is  $^3\text{H}$  and 2.300 Ci is  $^{14}\text{C}$ . Both of these radionuclides emit only low energy radiation and pose no external radiation hazard to personnel working at the site. This material is distributed among approximately 231 cells in the site.

### Radiation Dosimetry:

The University of Arizona maintained five environmental dosimetry stations on Site B from April 1989 thru September 1995 and an environmental comparison station on Page Ranch away from the site. A similar environmental comparison station is maintained in Tucson. The average environmental dose per calendar quarter measured for each of the three locations over the period specified is:

Tucson Comparison Station (USEPA Station at UA)	15 mrem/quarter
Page Ranch Comparison Station (Location away from Site B)	16 mrem/quarter
Page Ranch Site B (average of 5 stations)	17 mrem/quarter

These numbers are consistent with an average annual 'natural background' dose of approximately 55 mrem/year from cosmic radiation and radioactive material naturally present in the soil, although this value can vary significantly depending upon elevation and the nature of the local geology.

This information indicates that there is no measurable external radiation dose to personnel working on the site above that described as 'natural background'. Thus, radiation monitoring of all personnel working on the site during Closure, Post-Closure, or routine maintenance activities is not necessary. However, the UA Radiation Control Office will provide radiation measurement services, as it deems necessary, to assess situations that may arise in the future, e.g. use of soil moisture/density gauges.