

Vehicle-Mounted Gamma Spectrometer for Radiological Land Surface Surveys

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Abstract: A vehicle-mounted gamma spectrometer, Mobile Gamma Spectrometer (MGS), that is a practical solution for surface soil monitoring in rough, desert terrain is described. Surface soil scanning is applicable to land characterization, monitoring and clearance, all potential end-points of environmental remediation. The MGS is constructed, almost entirely, from proven commercially-available components and was successfully used to survey approximately 81 ha of desert for small areas of elevated radioactivity (hotspots). The results were compared against those from background areas and against a model hotspot that would contribute 20 $\mu\text{Sv/y}$ under an industrial scenario. Data processing was carried out with Mathematica 10, which includes strong list-processing and graphics capabilities, as well as a functional language for general mathematics. Two technicians can scan about 0.4 ha/hr. The system, with its light weight and wide tires, does minimal damage to the desert environment.

(Note: Synopsis is attached.)

Country or International Organization

United States of America

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