



Surface Preliminary Remediation Goals (SPRG) Calculator



Stuart Walker – walker.stuart@epa.gov, (703) 603-8748
Office of Superfund Remediation and Technology Innovation, US Environmental Protection Agency

SPRG: <http://epa-sprg.ornl.gov>

What is SPRG?

- SPRG stands for **Surface Preliminary Remediation Goal**.
- SPRGs are the initial cleanup goals for contamination on hard surfaces at a Superfund site and usually are not final cleanup levels.
- Used when there is no appropriate government regulation of cleanup levels.
- Used for residential, indoor worker, and outdoor worker exposure.

SPRG Calculator

- The **SPRG Calculator** is a tool that allows EPA to calculate radiation cleanup levels on contaminated hard outside surfaces (streets or sides of buildings.)
- Uses **slope factors** to calculate clean-up levels based on a **target cancer risk of 10^{-6}** .
 - **Slope factors** provide cancer risk posed by lifetime exposure to specific radionuclides. Slope factors also take into account the type of exposure (inhalation, ingestion, or external) and amount of exposure. For example, a resident on a site would expect to have a different exposure level than a worker on the same site.
 - **Target cancer risk of 10^{-6}** means that a person exposed to the contamination has a one in a million chance of developing cancer. (Target is based on highest estimated level of exposure. Most people will have less of a chance of developing cancer.)
- Takes into account different exposure pathways (shown in the diagrams below)

SPRG Calculator

Slope Factors



SPRG Equations



SPRG Calculation



Residential Land Use



Industrial Land Use



Outdoor Worker

2D Exposure to Fixed Settled Dust on Finite Slabs (Outdoor Worker)



3D Exposure to Fixed Settled Dust on Outdoor Surfaces (Indoor Worker)



3D Exposure to Fixed Contaminated Building Materials (Outdoor Worker)



2D Exposure to Fixed Contaminated Finite Slabs (Resident)



Settled Dust (Resident)

