



Waste and Cleanup Risk Assessment

You are here: [EPA Home](#) [OSWER](#) [Waste and Cleanup Risk Assessment](#) [Databases and Tools](#) [Preliminary Remediation Goals for Radionuclides \(PRG\)](#)

[PRG Home](#)

[PRG Calculator](#)

[User's Guide](#)

[Equations](#)

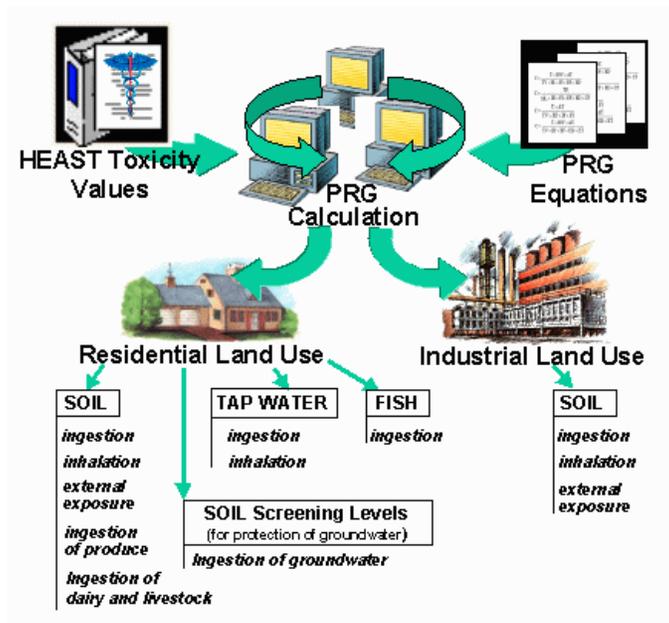
[What's New](#)

[Frequently Asked Questions](#)

[PRG Generic Tables](#)

Preliminary Remediation Goals for Radionuclides

Topic for Key OSWER Radiati
Guidances and Reports



Welcome

Welcome to the EPA's Superfund radionuclide preliminary remediation goal (PRG) download and calculation website. Here you will find risk-based PRGs calculated using default input parameters and the latest toxicity values. In addition, you are able to modify the input parameters to create site-specific PRGs to meet the needs of your site. To ensure proper application of the PRGs, please see further guidance on how to use the PRGs presented on this site located in the "User's Guide", "What's New", "FAQ", and "Download Area" links.

Introduction

A purpose of this guidance is to provide a PRG calculation tool to assist risk assessors, remedial project managers, and others involved with risk assessment and decision-making at CERCLA sites in developing PRGs. This database is based on [Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual \(Part B, Development of Risk-based Preliminary Remediation Goals\)](#) (RAGs Part B). RAGs Part B provides guidance on calculating risk-based PRGs. Initially used at the scoping phase of a project using readily available information, risk-based PRGs may be modified based on site-specific data gathered during the RI/FS study. PRG development and screening should assist staff in streamlining the consideration of remedial alternatives. Chemical-specific PRGs are from two general sources. These are: (1) concentrations based on potential Applicable or Relevant and Appropriate Requirements (ARARs) and (2) risk-based concentrations. ARARs include concentration limits set by other environmental regulations such as Safe Drinking Water Act maximum contaminant levels (MCLs). The second source for PRGs, and the focus of this database tool, is risk-based calculations that set concentration limits using carcinogenic toxicity values under specific exposure conditions.

The recommended approach for developing remediation goals is to identify PRGs at scoping, modify them as needed at the end of the RI or during the FS based on site-specific information from the baseline risk assessment, and ultimately select remediation levels in the Record of Decision (ROD). In order to set radionuclide-specific PRGs in a site-specific context, however, assessors must answer fundamental questions about the site. Information on the radionuclides that are present onsite, the specific contaminated media, land-use assumptions, and the exposure assumptions behind pathways of individual exposure is necessary in order to develop radionuclide-specific PRGs. The PRG calculator provides the ability to modify the standard default PRG exposure parameters to calculate site-specific PRGs.

This database tool presents standardized risk-based PRGs and variable risk-based PRG calculation equations for radioactive contaminants. Ecological effects are not considered in the calculator for radionuclides PRGs.

PRGs are presented for residential soil, outdoor worker soil, indoor worker soil, tap water, and fish ingestion. The risk-based PRGs for radionuclides are based on the carcinogenicity of the contaminants. Cancer slope factors used are from [HEAST](#).

Non-carcinogenic effects are not considered for radionuclide analytes, except for uranium for which both carcinogenic and non-carcinogenic effects are considered. To determine PRGs for the chemical toxicity of uranium, and for other chemicals, go to the [Screening Levels for Chemical Contaminants](#) webpage.

The standardized PRGs are based on default exposure parameters and incorporate exposure factors that present RME conditions. This database tool presents PRGs in both activity and mass units. Once this database tool is used to retrieve standard PRGs or calculate site-specific PRGs, it is important to clearly demonstrate the equations and exposure parameters used in the calculations. Discussion of the assumptions that go into the PRGs calculated should be included in the document where the PRGs are presented such as a Remedial Investigation (RI) Report or Feasibility Study.

This website combines current EPA SFs with "standard" exposure factors to estimate contaminant concentrations in environmental media (soil and water) that are protective of humans (including sensitive groups) over a lifetime. Sufficient knowledge about a given site may warrant the use of site-specific assumptions which may differ from the defaults. Exceeding a PRG usually suggests that further evaluation of the potential risks is appropriate. The PRG concentrations presented on this website can be used to screen pollutants in environmental media, trigger further investigation, and provide initial cleanup goals, if applicable. PRGs should be applied in accordance with guidance from EPA Regions.

This website has been updated after new EPA guidance has been issued. The website was initially made available for use in a transmittal memo entitled "Distribution of OSWER Radionuclide Preliminary Remediation Goals (PRGs) for Superfund Electronic Calculator", February 7, 2002. <http://www.epa.gov/superfund/health/contaminants/radiation/pdfs/rad.pdf>

[back to top](#)

This site is maintained and operated through an Interagency Agreement between the EPA Office of Superfund and Oak Ridge National Laboratory. For questions or comments please contact [Stuart Walker](#) at the Office of Superfund Remediation and Technology Innovation.