



OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

**Dose Modeling Evaluations and Technical Support
Document for the Authorized Limits Request for the
DOE-Owned Property
Outside the Limited Area,
Paducah Gaseous Diffusion Plant
Paducah, Kentucky**



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Disclaimer—The dose modeling software code utilized in this report, RESRAD, has undergone verification and validation (V&V) testing by the Argonne National Laboratory Environmental Science Division (ANL/ESD). The RESRAD code has been approved and used by the U.S. Department of Energy, Nuclear Regulatory Commission, and other regulatory agencies; however, ORISE takes no responsibility for the underlying accuracy of this code.

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Terms, Acronyms, and Abbreviations

AEA	Atomic Energy Act
AL	Authorized Limit(s)
ALARA	As Low as Reasonably Achievable
Am-241	americium-241
amsl	above mean sea level
ANL	Argonne National Laboratory
ATSDR	Agency for Toxic Substances and Disease Registry
bgs	below ground surface
Bq	Becquerel
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CG	Correlated/Uncorrelated Grouping
cm	Centimeters
cm/s	centimeters per second
Cs-137	cesium-137
CSM	Conceptual Site Model
DCF	Dose Conversion Factor
DCGL _{EMC}	derived concentration guideline level–elevated measurement comparison
DOA	Department of Energy Organization Act
DOE	U.S. Department of Energy
DOE-PPPO	DOE Portsmouth/Paducah Project Office
DSR	Dose-to-Source Ratio
EM	Environmental Management
EPA	U.S. Environmental Protection Agency
ft	foot (feet)
ft/mi	feet per mile
ft ³ /s	cubic feet per second
g/cm ³	grams per cubic centimeter
gal	gallon(s)
ha	hectare(s)
HU	Hydrogeologic Unit
ICRP	International Commission on Radiological Protection
IG	Implementation Guide
in	inch(es)
in/yr	inches per year
KAR	Kentucky Administrative Regulations
KDEP	Kentucky Department for Environmental Protection
KDFWR	Kentucky Department of Fish and Wildlife Resources

Terms, Acronyms, and Abbreviations

km	kilometer(s)
km ²	kilometers squared (square kilometers)
KOW	Kentucky Ordnance Works
LHS	Latin hypercube sampling
m	meter(s)
m/m	meters per meter
m ²	square meter(s)
MARSAME	Multi-Agency Radiation Survey and Assessment of Materials and Equipment
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDC	minimum detectable concentration
mi	mile(s)
mi ²	mile(s) squared (square miles)
mph	miles per hour
mrem/yr	millirem per year
NCRP	National Council on Radiation Protection and Measurements
NIOSH	National Institute for Occupational Safety and Health
NNSA	National Nuclear Security Administration
Np-237	neptunium-237
NSDD	North-South Diversion Ditch
NRC	U.S. Nuclear Regulatory Commission
ORAU	Oak Ridge Associated Universities
ORISE	Oak Ridge Institute for Science and Education
PCB	Polychlorinated Biphenyl
pCi/g	picocuries per gram
PGDP	Paducah Gaseous Diffusion Plant
PRC	Performance Results Corporation
Pu-238	plutonium-238
Pu-239	plutonium-239
Pu-240	plutonium-240
RCRA	Resource Conservation and Recovery Act
RG	Random Grouping
RGA	Regional Gravel Aquifer
SA	Sensitivity Analysis
SER	Site Evaluation Report
SOW	Statement of Work
T&E	Threatened and Endangered
Tc-99	technetium-99
TCE	Trichloroethylene

Terms, Acronyms, and Abbreviations

TED	Total Effective Dose
TEDE	Total Effective Dose Equivalent
TENORM	Technologically Enhanced Naturally Occurring Radioactive Material
Th-228	thorium-228
Th-230	thorium-230
Th-232	thorium-232
TVA	Tennessee Valley Authority
U-234	uranium-234
U-235	uranium-235
U-238	uranium-238
UCRS	Upper Continental Recharge System
USACE	U.S. Army Corp of Engineers
USGS	U.S. Geological Survey
WKWMA	West Kentucky Wildlife Management Area
WL	Working Level
yr	year(s)

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Executive Summary

EXECUTIVE SUMMARY

Environmental assessments and remediation activities are being conducted by the U.S. Department of Energy (DOE) at the Paducah Gaseous Diffusion Plant (PGDP), Paducah, Kentucky. The Oak Ridge Institute for Science and Education (ORISE), a DOE prime contractor, was contracted by the DOE Portsmouth/Paducah Project Office (DOE-PPPO) to conduct radiation dose modeling analyses and derive single radionuclide soil guidelines (soil guidelines) in support of the derivation of Authorized Limits (ALs) for “DOE-Owned Property Outside the Limited Area” (“Property”) at the PGDP. The ORISE evaluation specifically included the area identified by DOE restricted area postings (public use access restrictions) and areas licensed by DOE to the West Kentucky Wildlife Management Area (WKWMA). The licensed areas are available without restriction to the general public for a variety of (primarily) recreational uses.

Relevant receptors impacting current and reasonably anticipated future use activities were evaluated. The DOE-PPPO is responsible for Environmental Management (EM) activities associated with the PGDP and serves as the lead agency for the conduct of remedial actions at the site.

In support of soil guideline derivation, a Conceptual Site Model (CSM) was developed. The CSM listed radiation and contamination sources, release mechanisms, transport media, representative exposure pathways from residual radioactivity, and a total of three receptors (under present and future use scenarios). Plausible receptors included a Resident Farmer, Recreational User, and Wildlife Worker.

Three target dose constraints (above background)—1, 15, and 25 millirem per year (mrem/yr)—were considered in the soil guideline analysis. The 1 mrem/yr constraint represents a “walk-away” dose, that is, a dose that if satisfied, would eliminate the need for any remedial action. In addition, soil guideline derivation included a comparison to the 100 mrem/yr primary public dose limit (above background) and As Low as Reasonably Achievable (ALARA) considerations cited in DOE Order 458.1, *Radiation Protection of the Public and the Environment* (DOE 2011).

The most current RESRAD (Version 6.5) computer code available for the analysis was used for the technical assessments. This code was developed by the Argonne National Laboratory (ANL). Modeling evaluations for any onsite structures were excluded from the ORISE Statement of Work (SOW). Using careful technical judgment and assessment of site-specific and literature references as well as correspondence with DOE project personnel, the computational model was parameterized with emphasis on site-specific input values. Model outputs were evaluated to ensure that physical site conditions and mathematical terms were consistent. A sensitivity analysis ensured that important exposure pathways and parameters were not overlooked.

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In support of the forthcoming AL request, single radionuclide soil guidelines (outputs specified by the software modeling code) were generated for three receptors and thirteen targeted radionuclides. These soil guidelines were based on satisfying the project dose constraints. For comparison, soil guidelines applicable to the basic radiation public dose limit of 100 mrem/yr were generated. Single radionuclide soil guidelines from the most limiting (restrictive) receptor based on a target dose constraint of 25 mrem/yr were then rounded and identified as the derived soil guidelines. These single radionuclide soil guidelines were selected because they are detectable with standard and commonly available field instruments.

Historically, thirteen targeted radionuclides have been associated with PGDP operations. Only four, however, represent the most likely radioactive contaminants expected to be found in environmental media on the “Property.” Historical records, including several volumes of radiological characterization data pertaining to the “Property” were examined to determine which radionuclides exhibited a reasonable potential to be present in surface soils and sediment. The list of radionuclides was subsequently reduced to Cs-137, U-234, U-235, and U-238. This radionuclide subset is not meant to imply that the remaining soil guidelines for other radionuclides are irrelevant. DOE may use the remaining soil guidelines for these other radionuclides to develop ALs for the “Property.” Table 5-2 in this report should be consulted if other radionuclides are encountered at the “Property” when making decisions as to whether or not a target dose constraint or limit is satisfied.

The derived soil guidelines for the “Property” are presented in Table ES-1. These derived soil guidelines ensure that modeled receptors will not exceed the 25 mrem/yr target dose constraint, will be protective of human health and the environment, and will meet the requirements of DOE Order 458.1. The derived soil guidelines reflect above background concentrations of radioactive material.

Table ES-1. ORISE–Derived Radionuclide Soil Guidelines for the DOE–Owned Property Outside the Limited Area

Radionuclide	Soil Guideline (pCi/g)*
Cs-137	9.1
U-234	350
U-235	41
U-238	130

*The derived soil guidelines reflect above background concentrations of radioactive material.

An additional evaluation using the derived soil guidelines in Table ES-1 as inputs into the code was also performed at the request of the DOE-PPPO to determine the maximum (peak) dose for all receptors. The peak dose assessment was performed to demonstrate that for the current and future

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use scenarios modeled, the selected soil guidelines (based on a target dose constraint of 25 mrem/yr) would meet the 100 mrem/yr primary public dose limit (above background) for all receptors—even if DOE-PPPO or their contractor(s) failed to utilize the unity rule. The results indicate that the highest projected dose, 99 mrem/yr, occurred for the Resident Farmer at year “0.” Radiation doses to the Wildlife Worker and Recreational User were 12 mrem/yr and 6 mrem/yr, respectively.

This report contains the technical basis in support of the DOE’s derivation of ALs for the “Property.” A complete description of the methodology, including an assessment of the input parameters, model inputs, and results is provided in this report. The derived soil guidelines presented in this report are provided to DOE-PPPO for consideration. This report also provides initial recommendations on applying the derived soil guidelines. Ultimately, it is the DOE’s responsibility to develop and approve the AL request. If the requested ALs are approved, the DOE would be responsible for the proper management of these limits under its AL program.

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1.0: Introduction

1.0: INTRODUCTION

The U.S. Department of Energy (DOE) Paducah Gaseous Diffusion Plant (PGDP) is an active uranium enrichment facility located approximately 10 miles (mi) west of Paducah, Kentucky and 3.5 mi south of the Ohio River in the western part of McCracken County (Figure 1-1). The plant is situated on 3,424 acres. Approximately 748 acres comprise the industrial portion of PGDP, located within a fenced security area. This area is designated as secured industrial land use and contains active and inactive production buildings, offices, equipment and material storage areas, active and inactive waste management units, and other support facilities. The remaining 2,676 acres consist of an unsecured industrial land “buffer zone” surrounding the plant, and land transferred to the Tennessee Valley Authority (TVA) for the Shawnee Steam Plant and to the Commonwealth of Kentucky for wildlife conservation and recreational purposes (ORAU 2007, PRS 2008a).

The PGDP limited area (i.e., the area inside the security fence) is heavily industrialized; however, the area surrounding the plant is mostly agricultural and open land, with some forested areas. The reasonably anticipated future land use of the PGDP limited area is industrial as illustrated in Figure 1-1; however, final decisions associated with future land use will be made in conjunction with the remedial action process under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The PGDP is posted government property and trespassing is prohibited. Access to the PGDP limited area is controlled by guarded checkpoints, a perimeter fence, and vehicle barriers and is subject to routine patrol and visual inspection by armed plant protective forces. The DOE Reservation surrounding the PGDP limited area includes 1,986 acres licensed to the Commonwealth of Kentucky Department of Fish and Wildlife Resources (KDFWR). This area is part of the West Kentucky Wildlife Management Area (WKWMA) and borders PGDP to the north, west, and south. The WKWMA is an important recreational resource for Western Kentucky and is used by more than 10,000 people each year. Major recreational activities include hunting, field trials for dogs and horses, trail riding, fishing, and skeet shooting. The TVA Shawnee Steam Plant, adjacent to the northeast border of the DOE Reservation, is the only other major industrial facility in the immediate area.

Environmental assessments and remediation activities are currently being conducted by the DOE at the PGDP. The Oak Ridge Institute for Science and Education (ORISE) was contracted by the DOE Portsmouth/Paducah Project Office (DOE-PPPO) to conduct dose modeling evaluations for relevant receptors impacting current and projected future activities at the PGDP, specifically for DOE-Owned Property Outside the Limited Area.

The DOE-PPPO is responsible for Environmental Management (EM) activities associated with the PGDP and serves as the lead agency for the conduct of remedial actions at the PGDP.

1.0: Introduction

The Atomic Energy Act (AEA), the Department of Energy Organization Act (DOA), and related statutes assign to the Department the responsibility to protect the public, the environment, and property from the hazards associated with its research, development, production, or other activities. This responsibility, which lacks any limit in time, includes protecting the public and environment from radiation or radioactive material (DOE 1999).

The U.S. Environmental Protection Agency (EPA) Region 4 and the Kentucky Department for Environmental Protection (KDPEP) serve as the regulatory oversight agencies for CERCLA and Resource Conservation and Recovery Act (RCRA) activities. The Kentucky Cabinet for Health and Family Services, Department for Public Health, Radiation Health Branch, is the regulatory oversight agency for radiation in Kentucky.

As an essential component of these technical evaluations, ORISE was requested to develop an approach to support the forthcoming Authorized Limit (AL) request by deriving single radionuclide soil guidelines for various scenarios. *No ALs for the areas germane to this work has been previously developed.* DOE requested soil guideline derivation criteria for residual levels of contamination for properties that might be transferred in the future.

These soil guidelines will be used in part to classify areas for anticipated, future surveys by the DOE and its contractors prior to property transfer. Potential field implementation methodologies include the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) and the Multi-Agency Radiation Survey and Assessment of Materials and Equipment (MARSAME). MARSSIM and MARSAME are potential methodologies mentioned here because discrete “soil piles” and “rubble areas” containing residual radioactive materials are present. The MARSSIM methodology is applicable to surface soils whereas MARSAME has greater application to materials and equipment and volumetric considerations. Alternatively, plans employing different field approaches and guidance could be employed.

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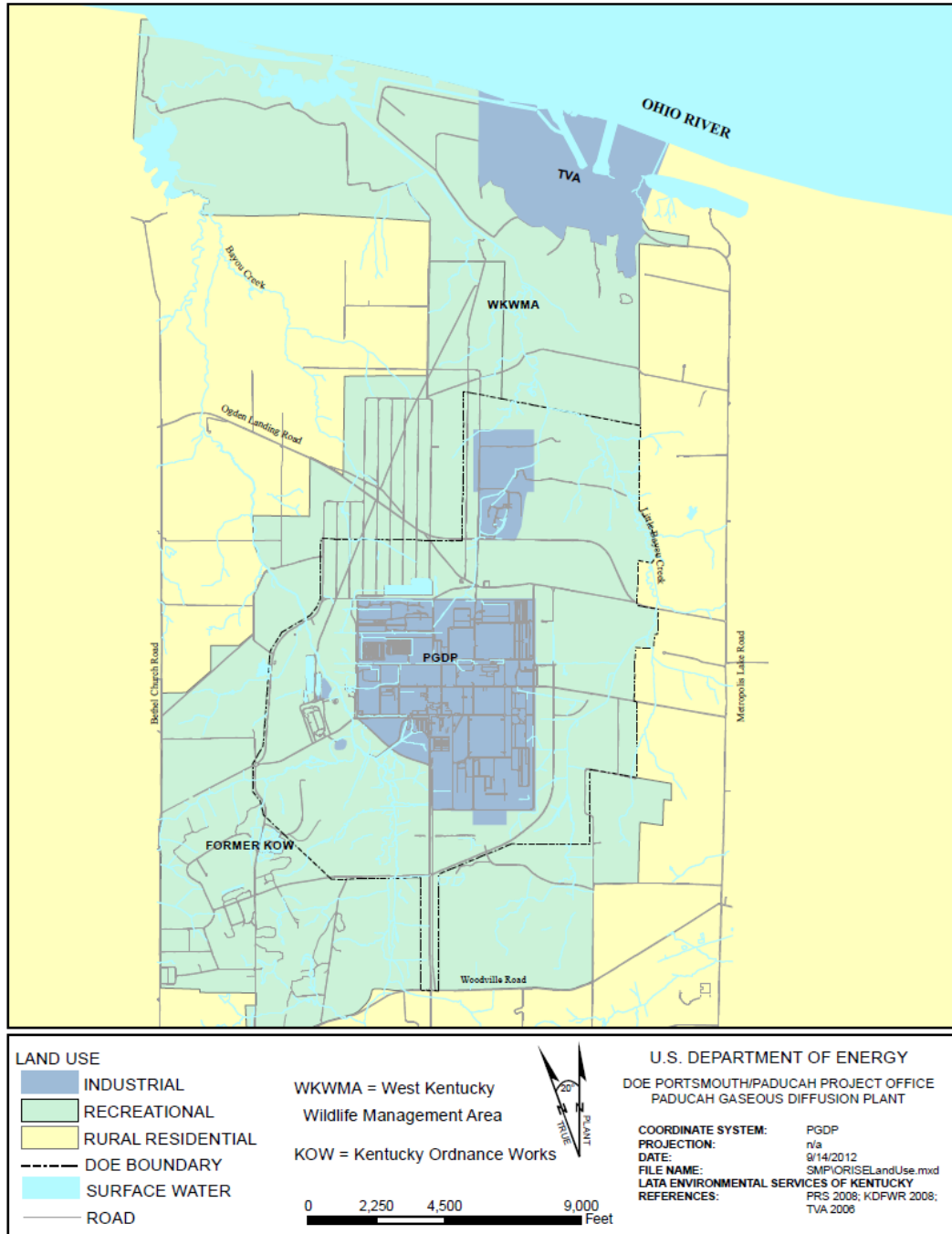


Figure 2.1. Reasonably Anticipated Future Land Use

Figure 1-1. Location of the Paducah Gaseous Diffusion Plant (Figure recreated by LATA Environmental Services of Kentucky, LLC [LATA KY] based on Figure 2.1 from DOE 2003)

1.0: Introduction

1.1 PURPOSE

The purpose of the analyses presented in this report is to provide technical support for DOE-PPPO to establish site-specific ALs for the DOE-Owned Property Outside the Limited Area in the vicinity of the PGDP in support of environmental remediation and potential future property transfer activities.

1.2 SCOPE

In this report, property outside the PGDP limited area is formally referred to as “DOE-Owned Property Outside the Limited Area” but abbreviated as “Property” in many instances for simplicity. The ORISE evaluation specifically includes the area identified by DOE restricted area postings (access for public use is restricted) and those areas licensed by DOE to the WKWMA (Figure 1-2). The licensed areas are available without restriction to the general public for a variety of (primarily) recreational uses. Therefore, both restricted and unrestricted areas are germane to this task. The terminology “Wildlife Areas,” is *not* used to avoid potential confusion that soil guidelines would be derived for areas not owned by DOE. This is important because, in the case of the WKWMA, not all of the WKWMA is comprised of property licensed from DOE; some areas in the WKWMA are Kentucky-owned properties. Refer to Section 3.2, “West Kentucky Wildlife Management Area,” for additional information on the WKWMA.

A site-specific soil guideline analysis is presented in this report, including a review of the site-specific environmental parameters utilized in the analysis, the methodology used for calculating the ORISE-derived soil guideline numeric limits, and identification of sensitive parameters to ensure that no individual parameter, or multiple parameters, were overlooked in the model equations as it pertained to the environmental transport of residual contaminants and the resulting dose at receptor locations. The analysis was applied specifically to the following site radionuclides provided by DOE-PPPO to ORISE: Am-241, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, and U-238.

1.3 EXCLUDED FROM SCOPE

Areas outside the scope of this report include non-DOE-owned property and the C-746-U Landfill. The Landfill was evaluated previously in an ORISE technical report entitled *Dose Modeling Evaluations and Technical Support Document for the Authorized Limits Request for the C-746-U Landfill at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (ORISE 2012) submitted to DOE-PPPO. In addition, residual radioactivity present along the creeks (away from the soil piles) and in creek sediments—and that may be present in higher concentrations than the soil and rubble piles—is excluded as it was the subject of a separate (non-ORISE) DOE assessment entitled *Radiation Dose Assessment under Current Conditions for Exposure to Radionuclides in Sediment, Soil, Deer, Surface Water, and Fish in Off-site Areas Near*

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the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (BJC 2001). This dose assessment report used previously collected analytical results for site-related radionuclides in sediment, soil, deer, surface water, and fish to determine the total dose (external plus internal) to human receptors coming into direct contact with these environmental media in offsite areas near the PGDP.

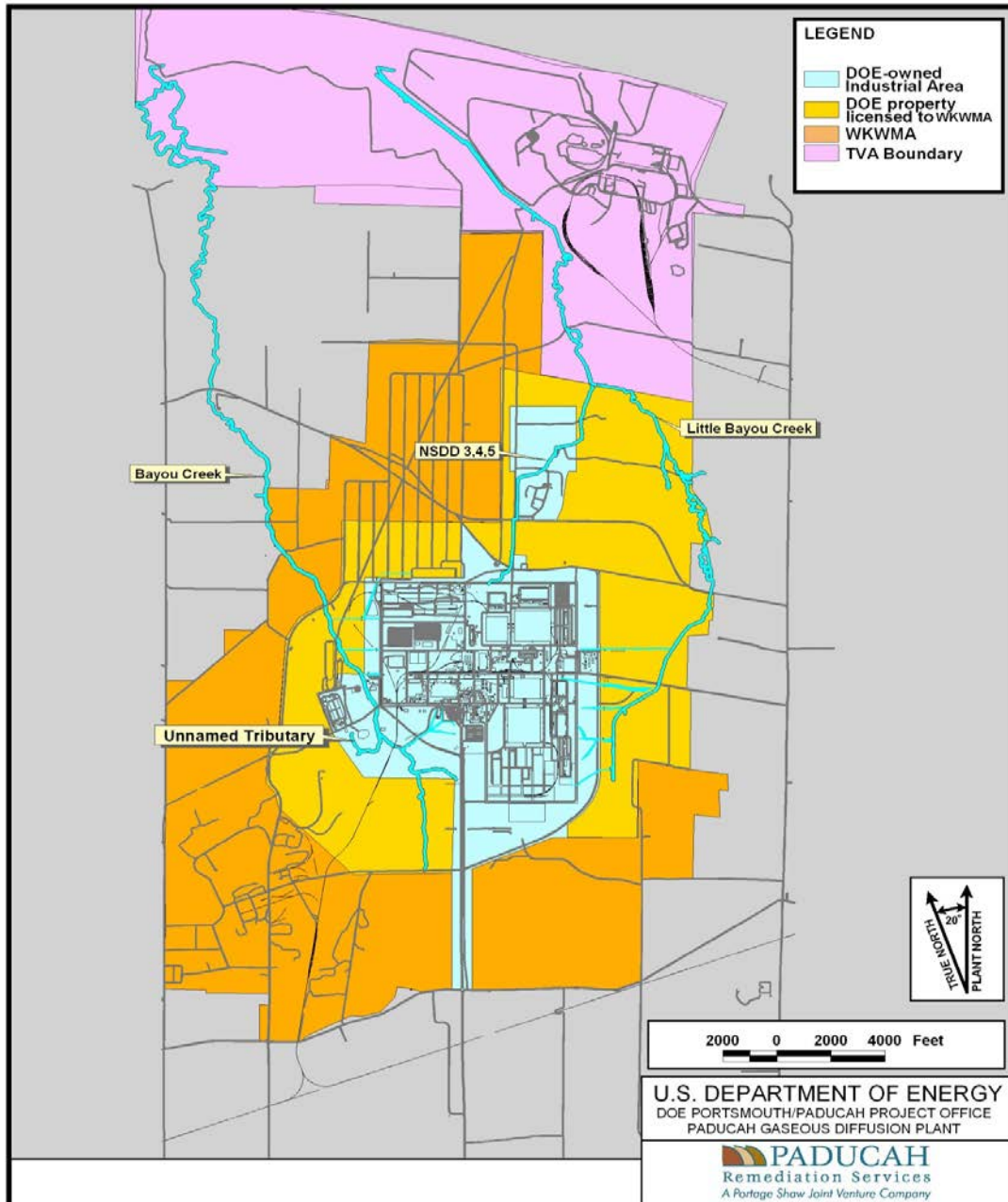


Figure 1-2. Map of DOE Industrial and WKWMA Areas and Prominent Creeks

1.0: Introduction

1.4 REPORT STRUCTURE

This report is organized into multiple sections:

- Executive Summary
- 1.0: Introduction
- 2.0: Analytical Plan
- 3.0: PGDP Environmental Setting
- 4.0: Basis for the Derivation of Soil Guidelines
- 5.0: Results and Discussions
- 6.0: Summary, Conclusions, and Application of ORISE-Derived Soil Guidelines
- 7.0: References
- Appendices (e.g., parameter tables and supporting input documentation, input/output files, and additional documentation)

The ORISE Analytical Plan (Plan) approved by DOE-PPPO (and evaluated by EPA and Kentucky regulatory staff) was an essential component of this work effort. Per agreement with DOE-PPPO, the Plan was modified as the project evolved and new information was identified. The Plan is introduced in Section 2.0, “Analytical Plan.” Supporting details are then captured in other sections of this report (particularly Section 4.0, “Basis for the Derivation of Soil Guidelines”). The Plan explains the methodology used to determine soil guidelines.

Section 3.0, “PGDP Environmental Setting,” extends the report’s introduction about the PGDP site from hydrological, topographical, and ecological perspectives.

Section 4.0, “Basis for the Derivation of Soil Guidelines,” serves as an important backdrop for the results and conclusions that follow. Details are provided regarding the Conceptual Site Model (CSM) and selection of the site dose modeling code and analyses conducted. Specifics related to various exposure scenarios, pathways, and the selection of input parameters for the modeling runs are included. In brief, this section provides the requisite preliminary information to take the reviewer to the point where the software modeling codes are actually used to generate results.

Section 5.0, “Results and Discussion,” provides the derived soil guidelines for the “Property” on a radionuclide-specific basis for specified target doses, receptors, and exposure pathways. Soil guidelines were selected based on the most restrictive receptor. Key sensitive parameters and uncertainty analysis are described.

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Section 6.0, “Summary, Conclusions, and Application of ORISE-Derived Soil Guidelines,” summarizes the results of the dose modeling and soil guideline analysis and provides recommendations on applying the soil guidelines.

An extensive set of references is compiled in Section 7.0, “References,” encompassing regulatory and guidance-based documents, PGDP site and offsite information, and references associated with utilizing the software code and evaluating input parameter selection. Extensive background site information was provided by DOE-PPPO staff in support of report preparation.

Appendices A through C are provided and contain the specifically chosen input parameters for the utilized computer code, supporting information for the selected inputs, and the code input/output results. Appendix D, “Additional Documentation,” contains an ORISE document comparing soil and sediment data with the DOE-PPPO proposed ALs and an external evaluation of ORISE dose modeling runs for the DOE-Owned Property Outside the Limited Area.

1.5 INTRODUCTION TO THE APPROACH

This section introduces the general aspects of the approach used by ORISE to derive soil guidelines for the “Property.” Supporting details are provided in Section 2.0, “Analytical Plan,” Section 4.0, “Basis for the Derivation of Soil Guidelines,” and Section 5.0, “Results and Discussion.”

Three target dose constraints (above background) were considered in support of soil guideline development. The target dose constraints in this report will be discussed in terms of the Total Effective Dose (TED) received in a year (yr); however, for simplicity the abbreviation “/yr” will be used. These dose constraints are:

- 1 millirem per year (mrem/yr): A DOE field element approval limitation and a dose considered negligible by the Commonwealth of Kentucky Radiation Health Branch .
- 15 mrem/yr: The EPA protective cleanup level for radionuclide contamination cited in EPA OSWER No. 9200.4-18, *Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination* (EPA 1997).
- 25 mrem/yr: The DOE level of residual radioactive material for real property above background in any calendar year that must be applied to each specific clearance of property for any actual or likely future use of the property as cited in DOE Order 458.1, *Radiation Protection of the Public and the Environment* (Paragraph 4.k.(2), “Release and Clearance of Property”) (DOE 2011). This dose level is consistent with the Kentucky Administrative Regulation (KAR) 902 KAR 100:042, Section 2, and the Nuclear Regulatory Commission (NRC) Title 10 of the Code of Federal Regulations (CFR) Part 20, Subpart E. However, the radiological release criteria of 25 mrem/yr

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cited in KAR and NRC regulations correspond to Total Effective Dose Equivalent (TEDE) and not TED as required in DOE Order 458.1 and 10 CFR 835.

The 1 mrem/yr constraint represents a “walk-away” dose level for the site. The term “walk-away dose” was cited in the 2001 memorandum *Risk versus Dose Cleanup Levels* issued by the Kentucky Radiation Health and Toxic Agents Branch (currently the “Kentucky Radiation Health Branch”) to the PGDP (Volpe 2001). This memorandum states the following: “It is the position of the Radiation Health and Toxic Agents Branch that dose assessments must be conducted and considered for all pathways and radionuclides” and that “regardless of the pathway, it is the position of the Radiation Health and Toxic Agents Branch that a 1 mrem/yr dose should be used as a walk away requirement where no further action is required to reduce the dose.”

In this context, the 1 mrem/yr dose is considered a constraint that applies to any reasonable scenario in which a receptor could be exposed to ionizing radiation from any contaminated media in the modeled area.

In addition to these target dose constraints, the DOE primary public dose limit of 100 mrem/yr above background, cited in DOE Order 458.1 (DOE 2011), was also compared to all receptors. The DOE describes Order 458.1 as the primary radiation protection standard used to protect the public and the environment from undue risk of radiation associated with DOE operations. The Order establishes requirements and the framework for the release of both real and personal property with residual radioactivity from DOE control.

Note: This work effort was initiated under DOE Order 5400.5, *Radiation Protection of the Public and the Environment* (DOE 1993) and DOE G 441.1-XX, *Implementation Guide: Control and Release of Property with Residual Radioactive Material for use with DOE 5400.5* (DOE 2002). However, during the course of this work, DOE Order 5400.5 was superseded by DOE Order 458.1 with the same title. (And the DOE-EM has indicated that DOE G 441.1-XX, originally issued in 2002, will be updated [Gelles 2009]). DOE Order 458.1 was issued on February 11, 2011 and cancelled DOE Order 5400.5 Chg 2, except for Figure IV-I, *Surface Contamination Guidelines*. A revision of the Order was required to promote consistency with the June 2007 amendments to DOE’s 10 CFR 835, *Occupational Radiation Protection* (Wallo 2007). ORISE evaluated the changes in DOE Order 458.1 against DOE Order 5400.5 and determined that DOE Order 458.1 did not have an impact on this work effort from a dose modeling perspective. In particular, this is due to the fact that some of the modifications included in the Order (e.g., the use of TED vs. TEDE) that could have affected this work are consistent with 10 CFR 835, which was followed in this project.

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Because the primary dose limit (100 mrem/yr) applies to all sources and pathways, a dose constraint of one quarter of the primary dose limit (i.e., 25 mrem/yr) is applied to each DOE source or practice (as cited in draft DOE G 441.1-XX). Therefore, per this Implementation Guide (IG), soil guidelines for annual dose from the release of property should be as far below 25 mrem/yr as is practicable. This dose constraint represents an upper bound or “cap” for As Low as Reasonably Achievable (ALARA)-based soil guidelines for release of property containing residual radioactive material. As Kentucky is an Agreement State, this dose constraint ensures DOE real property releases are consistent with dose requirements in 902 Kentucky Administrative Regulations (KAR) 100:042, *Decommissioning and Financial Surety*. (Requirements in 902 KAR 100:042 must be at least equivalent to those requirements found in 10 CFR 20, Subpart E, *Radiological Criteria for License Termination*, applicable to non-agreement states.)

The ORISE work effort was affected by the DOE’s July 9, 2010, implementation requirement in 10 CFR Part 835, *Occupational Radiation Protection*, to cite radiological units in TED in lieu of TEDE. Part 835 now incorporates more recent International Commission on Radiological Protection (ICRP) methodologies identified in ICRP Publication 60 (ICRP 1991) and ICRP Publication 68 (ICRP 1994), respectively, in support of the change to TED. The term “TEDE” has therefore been replaced in the regulation. Further discussion of this change and its impact on the dose modeling analyses can be found in Section 4.0, “Basis for the Derivation of Soil Guidelines.”

A CSM was developed to identify primary and secondary sources of contamination and release mechanisms, transport media, exposure pathways, and representative receptors. Three receptors were identified associated with current and reasonably anticipated future land use under a property transfer scenario. Receptors included under current use exposure scenarios were a teen Recreational User (hiker, jogger, horseback rider, skeet shooter, etc.) and a Wildlife Worker. Two adult Recreational Users (hunter and fisherman) were considered in the analysis but excluded for reasons discussed in Section 4.0, “Basis for the Derivation of Soil Guidelines.”

A future use Resident Farmer scenario was also incorporated into the CSM. The Resident Farmer and his family were assumed to move onto the site after a DOE property release, build a house, grow crops, and raise livestock for consumption. A more complete discussion of this receptor, including the specific modeling assumptions and results for this receptor are discussed in Section 4.0, “Basis for the Derivation of Soil Guidelines,” and Section 5.0, “Results and Discussion.”

In addition to DOE Order 5400.5, DOE Order 458.1, and 10 CFR 835 requirements, many other regulatory and guidance documents were examined in this dose modeling and soil guideline development report. References included DOE guidance documents, applicable Commonwealth of

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Kentucky requirements and guidance, Nuclear Regulatory Commission (i.e., NUREG) and EPA documentation, ICRP Reports, and an extensive set of Paducah site-specific records provided by the DOE-PPPO. References used in this analysis are provided in Section 7.0, “References.”

The most recent Argonne National Laboratory (ANL) RESRAD computer code was used for the assessments. Depending on receptor selection, exposure pathways were either “activated/complete” or “suppressed/incomplete.” Where applicable, as for example, the Resident Farmer scenario, the soil guideline determination included the groundwater pathway as an active pathway (refer to the CSM in Section 4.0, “Basis for the Derivation of Soil Guidelines,” for supporting details). The radon pathway was suppressed in all cases (refer to Section 4.4.2, “Exclusion of the Radon Pathway,” for supporting details).

Recognizing that the historical nature of PGDP operations primarily involved the processing of uranium isotopes, a primary assumption was made in this dose assessment that radionuclides from the uranium (U-238) and actinium (U-235) decay series did not exist in secular equilibrium with their decay products. Furthermore, the absence of secular equilibrium was also assumed for radionuclides associated with the thorium series (beginning with Th-232). None of the other targeted radionuclides in this analysis were members of a naturally occurring radioactive decay series. For purposes of this analysis, the uranium (U-238) and actinium (U-235) decay series did not exist in secular equilibrium with their decay products. This assumption is not related to the short-lived daughters, as ingrowth still occurs and that is considered in the model when deriving soil guidelines. In the analysis, this statement is meant to prevent long lived progeny, such as radium, from beginning at time “0” with an assigned activity (that is, they are allowed to grow in as well). If equilibrium is assumed, basically all the progeny will have the same activity as the parent at time “0”; that is, 1 picocurie per gram (pCi/g) in this case. This approach, if adopted, would have resulted in considerably lower soil guidelines.

A key component in the analysis was the parameterization of the model equations. ORISE conducted a thorough assessment to carefully review and determine an appropriate input for each parameter into the computer code. Soil guideline derivations were aided by reviews of site records and available references. Available site-specific parameters were utilized as input to the computer code. Selection of these parameters was influenced by a primary reference—the DOE’s *Methods for Conducting Risk Assessments and Risk Evaluations at the Paducah Gaseous Diffusion Plant Paducah, Kentucky* (DOE 2009a)—and consultations with DOE-PPPO staff and a DOE technical support contractor. DOE technical support contractor staff was contacted as needed to discuss site-specific issues. When unavailable, other sources for input parameters—including RESRAD default values—were utilized, based on an established selection hierarchy described in Section 4.0, “Basis for the Derivation of Soil Guidelines.”

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Unit (normalized) concentrations of 1 pCi/g for each of the site's targeted radionuclides were used for the primary modeling evaluations. This approach provided initial Dose-to-Source Ratios (DSRs) as a dose per unit activity factor (mrem/yr per pCi/g), calculated for exposed individuals over a time period of 1,000 yr. A period of 1,000 yr represents the conventional period germane to AL derivations, per guidance cited in DOE/CH/8901, *A Manual for Implementing Residual Radioactive Material Guidelines* (DOE 1989) and discussions with ANL RESRAD staff members.

In support of the forthcoming AL request, single radionuclide soil guidelines (an output specified by the software code) were generated for each receptor and targeted radionuclide. The results represented the code's single radionuclide soil guidelines based on satisfying radiation doses for all receptors of:

- 100 mrem/yr (the primary public dose limit)
- 1, 15, and 25 mrem/yr dose constraints

Following a careful evaluation of both the receptors modeled using RESRAD and the radionuclides that are reasonably expected to be present in environmental media on the "Property," the appropriate single radionuclide soil guidelines for the most restrictive receptor were then rounded to two significant figures and identified as ORISE-derived soil guidelines (refer to Section 5.0, "Results and Discussion").

Per a request from the DOE-PPPO, an additional evaluation was conducted using the ORISE-derived soil guidelines. The evaluation consisted of taking each radionuclide-specific derived soil guideline as an individual input to the modeling code and determining the maximum (peak) annual dose for each receptor at any time during the next 1,000 yr.

The resultant doses for all receptors are provided in Section 5.0. Conclusions regarding specifically satisfying the 100 mrem/yr public dose limit and the 25 mrem/yr target dose constraint are provided as well.

1.6 QUALITY AND TECHNICAL REVIEWS

The derivation of soil guidelines for the "Property" required numerous discussions with the project management team and thorough quality and technical reviews. In addition to internal (ORISE) staff reviews, DOE-PPPO and its contractor staff provided an external evaluation of the table of parameters for the RESRAD inputs. A DOE-PPPO contractor staff member with significant dose modeling expertise was also tasked with confirming the adequacy of a representative number of ORISE modeling runs to verify the code's output results.

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2.0: Analytical Plan

2.0: ANALYTICAL PLAN

Derivation of soil guidelines for the “Property” was a principal objective of this project. The Analytical Plan (Plan) described in this section contains the technical approach by which this project was organized and carried through to completion to satisfy this objective. Formal presentations on the Plan were provided to DOE, EPA, and Commonwealth of Kentucky Radiation Health Branch regulatory staff during an early phase of the project (April 2010). Per prior agreement with the DOE-PPPO, ORISE was authorized to modify the Plan when information was obtained that supported a technical rationale for required changes. Plan modifications did occur during the project and this report captures the culmination of that evolution.

This section contains introductory details about the Plan, consisting of the general approach for deriving soil guidelines; pertinent regulatory and guidance documents; the definition of and need for ALs; a summary of prior soil pile and rubble area evaluations in support of CSM development; the approach for receptor selection; identification of three general categories of parameters and priority designations using a Nuclear Regulatory Commission (NRC) NUREG classification; the conduct of a sensitivity analysis; a graphical depiction of a deterministic analysis; the radionuclides targeted for the dose modeling; source term information; and the general calculational methodology used to determine soil guidelines.

Supporting details are provided later in this document, particularly in Section 4.0, “Basis for the Derivation of Soil Guidelines,” and Section 5.0, “Results and Discussion.”

2.1 GENERAL APPROACH FOR SOIL GUIDELINE DERIVATION

In general, a technically defensible approach for conducting dose modeling—and deriving soil guidelines as an outcome—requires:

- Understanding the modeled location
- Establishing target radionuclides and dose constraints and limits
- Developing a defined CSM to identify and justify the inclusion and exclusion of exposure scenarios (pathways and receptors)—i.e., who gets exposed, where, how, etc.
- Identifying the dose modeling approach and “tools” to conduct the analysis—i.e., what software code(s) will be utilized and the rationalization for their selection
- Selecting and tabulating defensible user input parameters for the selected model/code to match the CSM based on hierarchy of 1) site-specific values, 2) calculated input values, 3) literature values, and 4) code-specific defaults

2.0: Analytical Plan

- Incorporating sensitivity analyses results and conclusions and an established hierarchy as to which parameters are more “sensitive” than others
- Refining/validating sensitive parameters
- Providing the specific methodology for soil guideline derivation
- Ensuring accurate computational derivation and appropriate interpretation of soil guidelines

In brief, many decisional dose modeling inputs are required to reach the end objective.

Developing site-specific soil guidelines for the modeled area was a stepwise, iterative process. First, multiple site-specific references were reviewed and a thorough environmental assessment was made of the site to identify relevant parameters and parameter values for the computational analysis. This step required numerous discussions with the ORISE project team, DOE-PPPO staff, and DOE contractor support personnel (ORISE 2010). Second, results of the assessment and evaluation of site environmental parameters were input into a computational model to provide a deterministic result for the receptor dose as a function of time. Third, a sensitivity analysis was performed to evaluate the results of the model equations and the sensitivity of specific environmental parameters to ensure the most realistic and scientifically plausible parameter values were used. Finally, a probabilistic analysis was performed to determine the impact of varying multiple sensitive parameters at once in terms of potential dose.

The iterative process ensured the results presented from the computer model reflected actual environmental conditions of the site as much as practicable and more importantly, assured decision makers that no single lumped parameter of interest in the model was overlooked in the description and physical transport of the material.

2.2 DOE REGULATIONS, GUIDANCE, AND AUTHORIZED LIMITS

2.2.1 *DOE ORDER 5400.5, DOE ORDER 458.1, DOE G 441.1-XX, AND 10 CFR PART 835*

Several primary DOE regulations, orders, and guidance documents influenced the soil guideline development effort. In particular, these included DOE’s 10 CFR Part 835, DOE Order 5400.5, and DOE G 441.1-XX. However, as previously discussed in Section 1.0, “Introduction,” DOE Order 5400.5 was cancelled and superseded in February, 2011, by DOE Order 458.1. The changes incorporated in the new Order did not affect this work effort from a dose modeling perspective.

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2.2.2 DEFINITION OF AUTHORIZED LIMITS

Per DOE Order 458.1, “An authorized limit is a limit on the concentration or quantity of residual radioactive material on the surfaces or within property that has been derived consistent with DOE directives including the ALARA process requirements. An authorized limit may also include conditions or measures that limit or control the disposition of property.”

2.2.3 RATIONALE FOR AUTHORIZED LIMITS

The DOE has determined the need to develop, approve and implement ALs for the “Property.” In support of an AL request, the DOE has requested ORISE derive soil guidelines for residual levels of contamination for properties that might be transferred in the future. These soil guidelines could be used to classify areas for future surveys prior to property transfer and establish the analytical requirements (required instrumentation “detection limits”) for those surveys.

2.3 SOIL PILES AND RUBBLE AREAS

Over its years of operation, onsite radiological contamination has appeared at the PGDP. Through plant effluent discharges and re-use activities, radiologically contaminated soil and sediment and rubble and debris areas, respectively, have been identified on the “Property.” Areas impacted by PGDP effluent releases have included banks associated with the Little Bayou and Bayou Creeks and unnamed tributaries, the North-South Diversion Ditch, and outfalls. Reuse activities involved the onsite removal of large diameter steel pipe, concrete slabs, and culverts to offsite locations. Radionuclides detected from these sources have included U-238 and progeny, Tc-99, Th-230, Am-241, Np-237, Pu-239, and Cs-137. Of these, processed uranium has been the predominant contaminant with Tc-99, Th-230, and transuranic radionuclides present in trace amounts. Based on prior field surveys and analysis, fixed radiological contamination predominates on rubble and debris.

Four DOE Site Evaluation Reports (SER) were evaluated by ORISE to identify soil piles and rubble areas located on the “Property” with the primary purpose to determine the importance of these areas on the development of the CSM and the follow-on dose modeling analysis (DOE 2008a, 2009c, 2010a, 2010b).

ORISE determined that due to the discrete nature of the soil piles and rubble areas relative to the size of the modeled area, these areas should be excluded as a significant component of the CSM and subsequently from the soil guideline derivation analysis. However, these areas remain of interest in the application of derived soil guidelines to address issues related to radioactivity present above background concentrations.

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2.4 RECEPTOR SELECTION

Appropriate receptor selection is a key consideration. Receptor selection (and CSM development) was aided by using available information. Particular references included the *Update to the End State Vision for the Paducah Gaseous Diffusion Plant Paducah, Kentucky* (2007 Update) (DOE 2008b).

ORISE evaluated these receptors relative to CSM development and soil guideline derivations. A primary determining factor in identifying credible receptors (exposure groups) included current and reasonably anticipated future land uses. Receptor selection has a direct influence on which exposure pathways are activated/complete or are alternatively suppressed/incomplete in the dose modeling code.

It should be recognized that both dose- and risk-based assessments have been previously conducted by the DOE at the PGDP—the latter has emphasized multiple age cohorts (adult, teenager, and child) and a specified exposure duration. This modeling effort, however, was dose-based. The scenarios that follow, and the dose modeling conducted in support of soil guideline development, were applicable to two adult receptors and one teen receptor and for an annual dose. Adults were generally selected due to higher inhalation and consumption rates (it is acknowledged that children are assumed to have higher soil ingestion rates).

Based on its evaluation, ORISE identified several human receptors and pathways for the dose modeling and soil guideline derivations. Specific receptors and pathways are identified in Section 4.0, “Basis for the Derivation of Soil Guidelines.”

2.5 PARAMETER TYPES

An extensive set of input parameters was identified and is provided in an appendix to this report. These parameters were first organized into three general categories: “Physical,” “Behavioral,” and “Metabolic.” Per NUREG/CR-6697, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes* (Yu et al. 2000); they are defined as follows:

- **Physical**—Any parameter whose value would not change if a different group of receptors were considered. These parameters are determined by the source, its location, and the geological characteristics of the site (these parameters are therefore “source”- and “site”-specific).

NUREG/CR-6697 (Chapter 3) illustrates that physical parameters predominate in dose modeling evaluations. For RESRAD, 89 physical parameters, 16 behavioral parameters, 10 metabolic parameters, 27 dual-type parameters, and 3 unclassified parameters were identified. These parameters are typically site-specific.

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Examples of physical parameters include evapotranspiration coefficients, depth of soil mixing layer, mass loading, and wind speed.

- **Behavioral**—Any parameter whose value depends on the receptor’s behavior and the scenario definition. For the same group of receptors, a parameter value could change if the scenario changes (e.g., parameters for recreational use could be different from those for residential use).

Behavioral parameters include the outdoor time fraction, mass loading, depth of soil mixing layer, and quantity of water for household purposes.

- **Metabolic**—A parameter that represents the metabolic characteristics of the potential receptor and is independent of the scenario. Parameter values may be different in different population age groups. Per ICRP Publication 43, *Principles of Monitoring for the Radiation Protection of the Population* (ICRP 1985), parameters representing metabolic characteristics are defined by average values for the general population. These values would not be expected to be modified for a site-specific analysis because the parameter values would be independent of site conditions.

Examples of metabolic parameters include consumption of fruit, non-leafy vegetables, grains, leafy vegetables, milk, meat, poultry, and fish; soil ingestion rate; drinking water intake; livestock fodder intake for meat and milk; livestock water intake for meat and milk; and livestock intake of soil.

2.6 PRIORITY DESIGNATIONS

NUREG/CR-6697 was also reviewed to establish an initial mechanism for the measure of an individual parameter’s impact or importance. The NUREG assigns Priority Levels “1,” “2,” and “3.” Level 1 indicates the highest priority; Level 2 represents a medium priority; and Level 3 represents the lowest priority. This ranking is valuable for examining the relative importance of a deterministic (or probabilistic) input.

Priority 1 designations provided as examples from NUREG/CR-6697 include the following: distribution coefficient, density of cover material, density of contaminated zone, density of saturated zone, saturated zone total porosity, saturated zone effective porosity, saturated zone hydraulic conductivity, unsaturated zone thickness, depth of roots, and plant transfer factors.

ORISE used Priority 1 designations as a starting point in the soil guideline report development. Evaluations of Priority 2 and Priority 3 designations were also conducted. Evolution of these designations occurred during this project with eventual selection of several site-specific, physical parameters and emphasis on the outcome of sensitivity analyses to ensure key parameters were

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identified. The results of these evaluations, including technical justifications for final selections, are discussed in Section 4.0, “Basis for the Derivation of Soil Guidelines.”

2.7 MODELING APPROACH

Parameterization of the model was evaluated through the assessment described previously. Models were tested and parameters evaluated through a deterministic sensitivity analysis and probabilistic analysis.

The approaches for these analyses are depicted in Figure 2-1 from NUREG/CR-6676, *Probabilistic Dose Analysis Using Parameter Distributions Developed for RESRAD and for RESRAD-BUILD Codes* (Kamboj et al. 2000). In a deterministic analysis, a single input value results in a single output value. When the analysis is extended probabilistically, a distribution results around the input and output values.

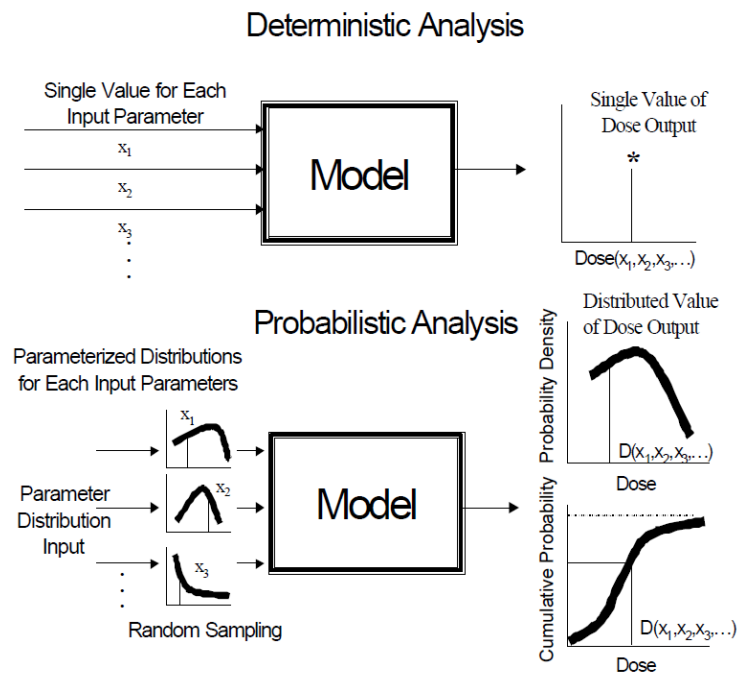


Figure 2-1. Concepts of Deterministic and Probabilistic Analysis
(from NUREG/CR-6676, May 2000)

A sensitivity analysis was employed to identify specific input parameters having a definitive influence on the dose output and a probabilistic analysis was performed to determine the impact of varying

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multiple sensitive parameters all at once. Sensitivity and probabilistic analyses and results are discussed later in this report.

2.8 TARGETED RADIONUCLIDES

Due to the PGDP's mission, principal radionuclides modeled for this project began with uranium isotopes. Targeted radionuclides in the ORISE analysis consisted of U-235, U-238, and U-234. Other radionuclides, not associated directly with uranium decay, appeared as a consequence of the enrichment process and PGDP commercial applications over its operating history. This included Tc-99, a radioactive fission product and principal contaminant offsite, which was introduced at the site when reprocessed uranium was introduced into the diffusion process. Neptunium-237 was also identified as early as 1957. Enrichment operations also eventually resulted in the appearance of plutonium, such as Pu-239 and Pu-241. Radioactive decay of Pu-241 in turn produced Am-241. Additional information regarding these radionuclides, concentrations historically encountered at the PGDP, worker doses, exposure pathways, and risks, etc. can be found in the PGDP site profile prepared by Oak Ridge Associated Universities (ORAU) for the National Institute for Occupational Safety and Health (NIOSH) (ORAU 2007). Several of these radionuclides have also been detected outside the DOE limited area as a consequence of plant releases.

Cs-137 and Pu-239/240 have been detected on the "Property." Cs-137 may have also been used at the PGDP for a limited, specific application process.

Site- and process-related radionuclide selections were determined initially from the ORISE Statement of Work (SOW). Following review of DOE 2008b, Table 1.1, *Significant Contaminants of Potential Concern at PGDP*, and discussions with DOE-PPPO staff, Th-228 was added to the list of radionuclide contaminants of concern.

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The radionuclide listing utilized in this project, relevant to operations at PGDP, is shown in Table 2-1.

Table 2-1. List of Targeted Radionuclides

Targeted Radionuclides	
Am-241	Th-228
Cs-137	Th-230
Np-237	Th-232
Pu-238	U-234
Pu-239	U-235
Pu-240	U-238
Tc-99	

Secular equilibrium is typically assumed in dose modeling analyses for members of the uranium (U-238), thorium (Th-232), and actinium (U-235) naturally occurring decay chains for the purpose of including contributions from radioactive progeny. However, secular equilibrium was not assumed in this project due to the nature of the PGDP’s enrichment mission. This important assumption was verified with DOE-PPPO technical staff and inputs to the dose modeling code accordingly reflected this decision. The contribution from progeny ingrowth is reflected in the single radionuclide soil guideline for the parent in each chain. These guideline values are generated as an output from the software code and are a precursor to the derived soil guidelines (refer to Section 4.0, “Basis for the Derivation of Soil Guidelines,” and Section 5.0, “Results and Discussion”).

2.9 SOURCE TERM

Site- and process-related radionuclides, generated from activities at the PGDP, are present on the “Property.” These represent radiation and contamination sources and contributors to receptor dose.

Dose contributors depicted in the CSM (Section 4.3, Figure 4-1) included residual radioactive material contamination in soil/sediment as a consequence of PGDP releases. Examples of releases include plant spills, waterway releases, groundwater discharges to the Little Bayou Creek Seep Area, aerial deposition, and rubble and debris placement.

2.10 SOIL GUIDELINE OUTPUT METHODOLOGY

The following approach was applied to the dose modeling soil guideline outputs:

- A normalized (unit) concentration of 1 pCi/g for each targeted radionuclide was input to the codes.

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- Doses were calculated (by radionuclide) as a function of time, up to 1,000 years, representing the conventional period used in these analyses for soil guideline determinations. The peak dose appearing within this time period was determined (per unit activity of the parent radionuclide).
- Resulting DSRs were compared to the DOE project established dose constraints and primary dose limit—associated respectively with specific receptors—resulting initially in single radionuclide soil guidelines. The following general equation illustrates use of the 1 mrem/yr dose constraint in the initial generation of single radionuclide soil guidelines:

$$\text{Soil Guideline} = \left(\frac{1 \text{ mrem}}{\text{DSR} \frac{\text{mrem}}{\text{pCi/g}}} \right) \quad (\text{pCi/g})$$

A detailed discussion describing the approach for soil guideline determinations and the resultant ORISE-derived soil guidelines, receptor-specific peak doses, and suggestions for application of the soil guidelines can be found in Section 4.0, “Basis for the Derivation of Soil Guidelines”; Section 5.0, “Results and Discussion”; and Section 6.0, “Summary, Conclusions, and Application of ORISE-Derived Soil Guidelines” of this report.

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3.0: PGDP Environmental Setting

3.0: PGDP ENVIRONMENTAL SETTING

This section provides an overview of the DOE-owned property encompassing the PGDP site with emphasis on environmental features. This information supported the radiation dose modeling analysis and soil guideline derivations described in this report. Descriptions are provided of the geography and physiography, demography and land use, climatology and meteorology, geology, hydrology, and ecological features.

The information provided in this section was excerpted from DOE 2003 and the *Public Health Assessment for the Paducah Gaseous Diffusion Plant (USDOE) Paducah, McCracken County, Kentucky* from the Agency for Toxic Substances and Disease Registry (ATSDR 2002). Minor editorial changes were made as appropriate. Reviewers should reference the DOE document for additional details, including supporting references, graphics, etc. Section 3.2, “West Kentucky Wildlife Management Area,” provides information on the WKWMA (excerpted from ATSDR 2002).

3.1 GENERAL ENVIRONMENTAL AND PHYSICAL SITE CHARACTERISTICS

3.1.1 GEOGRAPHY AND PHYSIOGRAPHY

The PGDP is located in western McCracken County, Kentucky, approximately 3 mi south of the Ohio River and approximately 10 mi west of the City of Paducah. Approximately 90% of the area within a 5-mi radius of the plant is agricultural or forested land. Urban and industrial lands comprise less than 4% of the surrounding area, and surface-water bodies cover approximately 5%.

The PGDP is located in the Jackson Purchase Region of western Kentucky, at the northern tip of the Mississippi Embayment portion of the Atlantic Coastal Plain physiographic province. The area is bounded on the north and east by the Highland Rim portion of the Interior Low Plateau physiographic province, an area of low plateaus on stratified sedimentary rock. The Mississippi Embayment is a large sedimentary trough oriented north-south that received sediments from the middle of the North American continent.

The PGDP is situated in an area characterized by low relief. Elevations on the DOE-owned property vary from approximately 350 to 390 feet (ft) above mean sea level (amsl), with the ground surface sloping at a rate of approximately 27 feet per mile (ft/mi) toward the Ohio River. Two main topographic features dominate the landscape in the surrounding area: the loess-covered plains, at an average elevation of 390 ft amsl; and the Ohio River floodplain zone, dominated by alluvial sediments, at an average elevation of 315 ft amsl. The terrain of the PGDP area is modified slightly by the dendritic (i.e., branching like a tree) drainage systems associated with the two principal streams in the area, Bayou Creek and Little Bayou Creek. These northerly flowing streams have eroded small valleys that are approximately 20 ft below the adjacent plain.

3.0: PGDP Environmental Setting

3.1.2 POPULATION AND NEARBY COMMUNITIES

The total population within a radius of 50 mi (80.46 kilometers (km)) radius of PGDP is approximately 500,000. An estimated 50,000 people live within 10 mi (16.09 km) of PGDP and homes are scattered along rural roads around the plant. The population of Paducah, Kentucky, based on the 2000 U.S. Census, is 26,307; the total population of McCracken County, which covers 251 square miles (mi²) (650.4 square kilometers (km²)) is approximately 65,000. The closest communities to PGDP are the unincorporated towns of Grahamville, about 1 mi (1.6 km) to the east, and Heath, located about 1 mi (1.6 km) southeast (Figure 3-1).

Historically, groundwater was the primary source of drinking water for residents and industries in the vicinity of the plant area. Due to trichloroethylene (TCE) contamination in the underground plume from the PGDP, some area residents and industries have chosen to replace groundwater sources with water supplied by the West McCracken County Water District. In areas where the groundwater is either known to be contaminated or is suspected of becoming contaminated in the future, the PGDP continues to provide municipal water. Several residential out-of-service wells are utilized by DOE for monitoring (per written agreements). Residential wells that are no longer sampled have been capped and locked.

The nearest community downstream of Paducah using surface water for drinking water is Cairo, Illinois, which is located at the confluence of the Upper Mississippi and Ohio Rivers.

3.1.3 CLIMATOLOGY AND METEOROLOGY

The climate of the PGDP area can be described as humid-continental. It is characterized by warm and humid summers and moderately cold and humid winters. Temperatures for the summer months average 85°F, while winter temperatures average 36°F. During the winter months, temperatures drop below freezing an average of 60 nights and 10 days. The summers average 40 days per year of 90°F or higher temperatures.

Precipitation is distributed relatively evenly throughout the year and averaged 50 inches per year (in/yr) from 1969 to 1989. The average annual precipitation for the region from 1984 to 1999 was 47.84 in/yr. Most groundwater recharge and stream flooding occur between November and May, when evapotranspiration normally is less than the remainder of the year.

The average prevailing wind in the area is from the south to southwest at approximately 9.8 miles per hour (mph). Generally, stronger winds are observed when the winds are from the southwest or northwest.

3.0: PGDP Environmental Setting

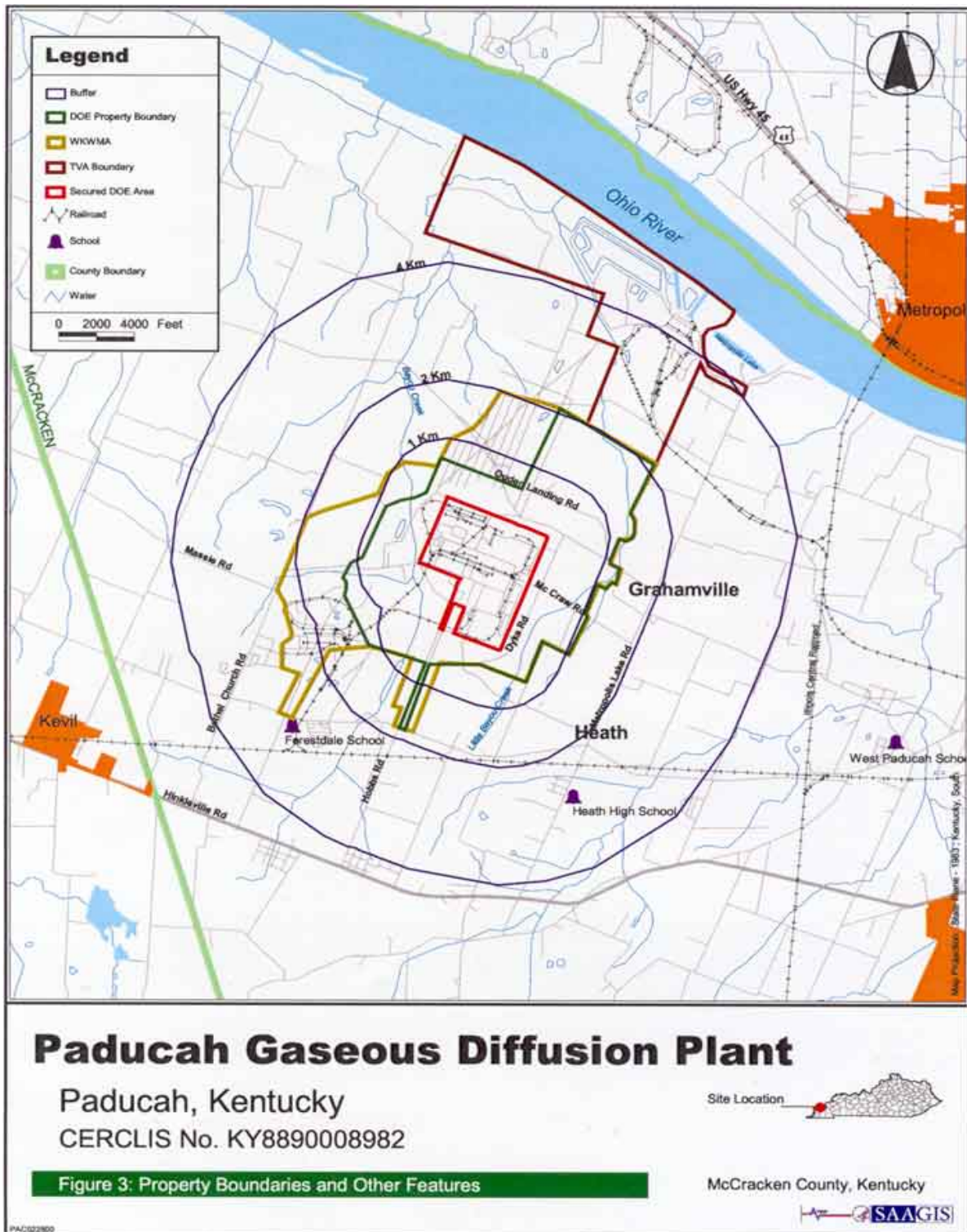


Figure 3-1. Communities in the Vicinity of the PGDP

3.0: PGDP Environmental Setting

3.1.4 GEOLOGY

The subsurface in the PGDP vicinity consists of approximately 350 ft of Cretaceous, Tertiary, and Quaternary sediments unconformably overlying Paleozoic bedrock. In the PGDP vicinity, these sediments dip gently to the south-southwest toward the axis of the Mississippi Embayment and overlie northward-dipping Paleozoic bedrock. In ascending stratigraphic order, bedrock is overlaid by a rubble zone, the McNairy Formation, the Paleocene Porters Creek Clay, undifferentiated Eocene sediments, and Pliocene and Pleistocene continental deposits (Figure 3-2).

The erosion and subsequent fill of the ancestral Tennessee River Valley during the Pleistocene is a primary factor controlling the geologic units beneath the PGDP. During the Pleistocene, the ancestral Tennessee River occupied a position close to the present-day course of the Ohio River. The southern edge of the former Tennessee River Valley underlies the PGDP. Figure 3-3 presents a general north-south cross section of the geologic units extending from PGDP to the Ohio River.

Several engineering and environmental investigations have defined the geology of DOE's PGDP reservation. A 1993 siting investigation for the C-746-U Landfill provides the site-specific information that follows.

3.1.4.1 Bedrock and the Rubble Zone

Deep borings at the PGDP have encountered Mississippian limestone bedrock approximately 335 to 350 ft below ground surface (bgs). Immediately overlying bedrock at the PGDP is a rubble zone, which consists of a layer 5 to 20 ft thick of subangular chert and silicified limestone fragments.

3.1.4.2 McNairy and Clayton Formations

Overlying the rubble zone are the unconsolidated deposits of the Upper Cretaceous McNairy Formation. This formation is composed of interbedded and interlensing sand, silt accessory, and clay. The sands are well-sorted, fine-grained, micaceous (composed of mica, a group of aluminum silicate minerals), and often glauconitic (containing glauconite, a greenish mineral of the mica group composed of hydrous silicate of potassium, iron, aluminum, or manganese). Near the PGDP, the McNairy Formation can be subdivided into three lithologic members: 1) a 60-ft thick sand-dominant lower member; 2) a 100- to 130-ft thick middle member composed predominantly of silty and clayey fine sand; and 3) a 30- to 50-ft thick upper member consisting of interbedded sands, silts, clays, and occasional gravels. Deposits of the Clayton Formation overlie the McNairy Formation. Because of difficulties in distinguishing between the Clayton and McNairy Formations at the PGDP, these lithologies have been grouped together and termed the McNairy Formation. Total thickness of the McNairy Formation is approximately 225 ft.

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3.1.4.3 Porters Creek Clay

Stratigraphically overlying the McNairy Formation, the Paleocene Porters Creek Clay occurs in southern portions of the site as a massive glauconitic clay with lesser interbeds of sand. A terrace slope of the ancestral Tennessee River completely cuts through the thickness of the Porters Creek Clay under the south end of the PGDP. The Porters Creek Clay is approximately 100-ft thick immediately southwest of the PGDP but is absent, or present only as thin isolated remnants, to the north of the terrace slope.

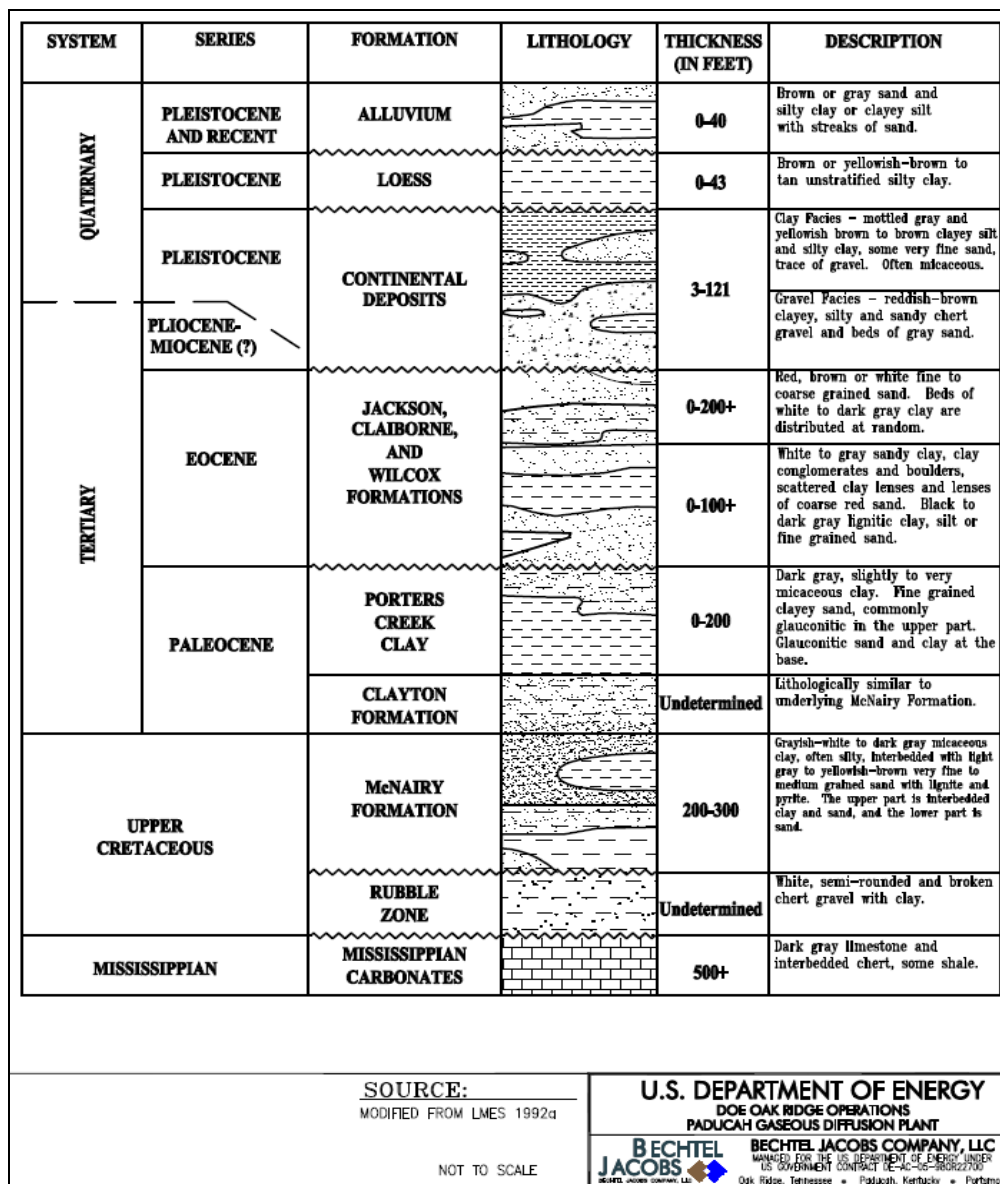


Figure 3-2. Geologic Columnar Section in the Vicinity of the PGDP

3.0: PGDP Environmental Setting

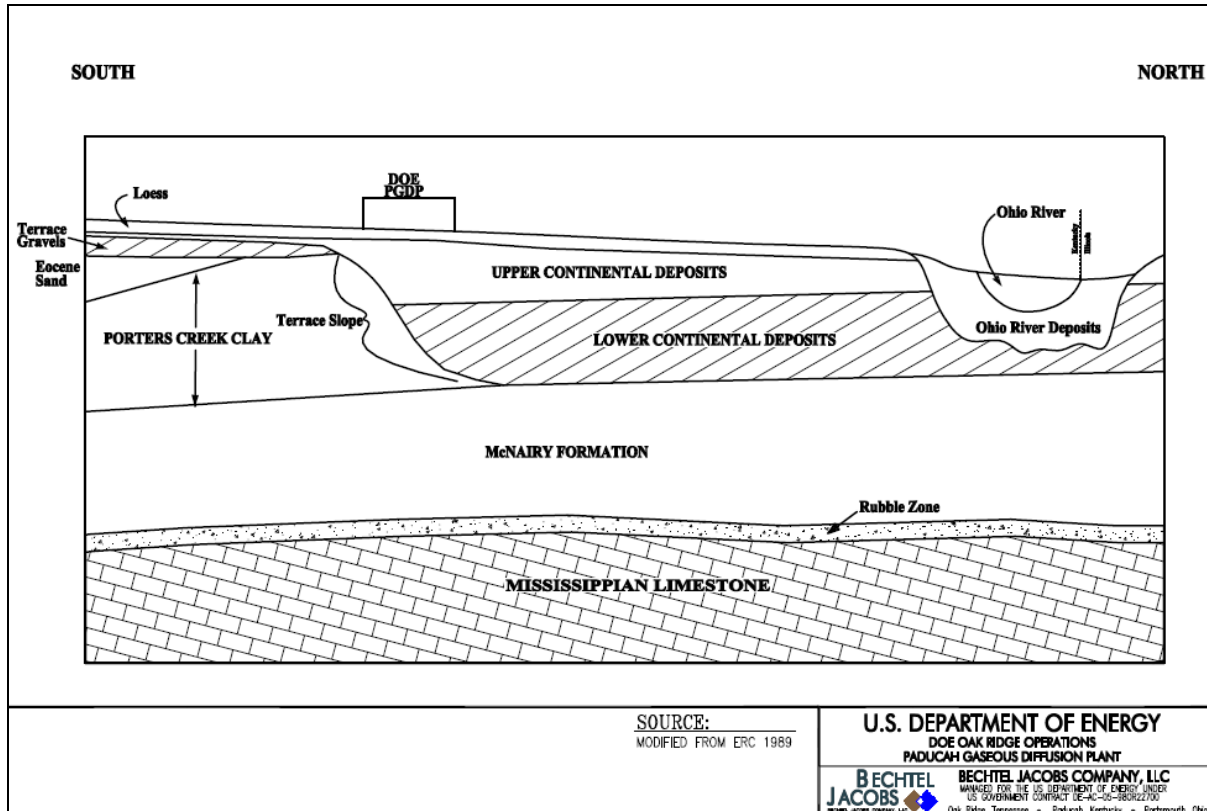


Figure 3–3. Geologic Cross Section of the PGDP

The top of the Porters Creek Clay south of the PGDP has significant topographic relief. A greater depth to the top of the Porters Creek Clay to the east of the PGDP permitted deposition of a thick, relatively permeable Pliocene gravel deposit near the surface.

3.1.4.4 Eocene Sands

Eocene sands, silts, and clays overlie the Porters Creek Clay south of the PGDP. Researchers have not attributed these sediments to a specific formation. The thickness of the Eocene sands approaches zero near the terrace slope and increases southward to greater than 100 ft.

3.1.4.5 Continental Deposits

Pliocene and Pleistocene continental deposits unconformably overlie the Cretaceous through Eocene strata in the vicinity of PGDP. The Pliocene deposits consist of lobes of poorly sorted, silty sand and gravel that occur south of PGDP (i.e., terrace gravels). These sediments represent an alluvial fan deposit that covered all of western Kentucky and parts of Tennessee and Illinois during the Pliocene Epoch.

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Beginning near the southern boundary of the PGDP and extending north of the C-746-U Landfill, and subsequently beyond the Ohio River, a thick sequence of Pleistocene continental deposits fills the buried valley of the ancestral Tennessee River. This sediment package consists of a basal sand and gravel member, the lower continental deposits, an overlying finer-textured lithofacies, and the upper continental deposits. Where fully developed, the upper continental deposits include a bottom sand unit overlain by a thick silt and clay interval containing at least two horizons of sand and gravel.

- **Lower Continental Deposits**—Pleistocene sand and gravel units, collectively averaging 30-ft thick, underlie most of PGDP and the northern portion of the DOE-owned property. Depth to the top of this lower member in the main plant area is approximately 60 ft. The matrix is characteristically medium to coarse sand and chert gravel of variable sorting. Thickness of the individual depositional units varies widely. The lateral continuity of the individual depositional units typically is limited.
- **Upper Continental Deposits**—The upper member sediments (Pleistocene) include a wide variety of textures within three depositional series. A basal sand unit is generally present, representing the transition from gravel and coarser sand of the lower member continental deposits to the overlying silty clay unit. The sand generally has a fining upward texture, becoming siltier toward the top of the unit.

An overlying interval of fine-textured sediments defines a middle unit. This unit occurs in most locations and is generally comprised of silty clay or clayey silt. However, a silty, fine sand facies is common. The thickness of the unit varies widely from <10–40 ft.

Sand and gravel deposits define an upper unit. Texture and sorting are widely variable among the sand and gravel deposits. Where the unit is fully developed, three horizons are present: 1) a basal sand and gravel horizon; 2) a middle, finer-textured horizon, typically consisting of a silty, fine sand or silt; and 3) an upper sand and gravel horizon.

Other than the broad lens-character of some sand and gravel units, the upper member continental deposits do not contain recognizable bedding features. Gradational textural changes are common. Silt and clay facies typically are mottled with frequent vertical traces filled with lighter colored silt or clay.

3.1.4.6 *Surficial Deposits/Soils*

Silt of the Pleistocene Peorian Loess and an older unit tentatively identified as the Roxanna Loess covers sediments both north and south of the buried terrace slope. The loess deposit is virtually indistinguishable from silt facies of the upper member of the continental deposits. Loess typically is

3.0: PGDP Environmental Setting

10- to 15-ft thick beneath most of PGDP; however, construction activities have excavated the loess or replaced the loess with fill material in many areas. Soils of the area are predominantly silt loams that are poorly drained, acidic, and have little organic content.

Six soil types are associated with the PGDP as mapped by the Natural Resources Conservation Service, formerly the Soil Conservation Service. These are Calloway silt loam, Grenada silt loam, Loring silt loam, Falaya-Collins silt loam, Vicksburg silt loam, and Henry silt loam. The dominant soil types, the Calloway and Henry silt loams, consist of nearly level, somewhat poorly drained to poorly drained soils that formed in deposits of loess and alluvium. These soils tend to have low organic content, low buffering capacity, and acidic pH ranging from 4.5 to 5.5. The Henry and Calloway series have a fragipan horizon, a compact and brittle silty clay loam layer that extends from 26 inches (in) bgs to a depth of 50 in or more. The fragipan reduces the vertical movement of water and causes a seasonally perched water table in some areas at the PGDP. In areas within the PGDP where past construction activities have disturbed the fragipan layer, the soils are best classified as “urban.”

3.1.5 HYDROLOGY

The PGDP is in an area of abundant surface water and groundwater resources. Creeks that bound the east and west sides of the PGDP flow north from the PGDP to join with the Ohio River. The sands and gravels of the continental deposit form a shallow aquifer beneath most of the PGDP and the contiguous area to the north, beginning at the Porters Creek Clay Terrace under the south end of the PGDP and extending to the north beyond the Ohio River.

3.1.5.1 Surface Water Hydrology

The PGDP is located in the western portion of the Ohio River basin. The plant is within the drainage areas of Bayou and Little Bayou Creeks and is situated on the divide between the two creeks, with Bayou Creek on the west and Little Bayou Creek on the east (Figure 3-4). Surface-water bodies in the vicinity of the PGDP include the Ohio River to the north, Metropolis Lake (located east of Shawnee Steam Plant), Bayou Creek, Little Bayou Creek, numerous small tributaries and creeks, as well as surface-water ditches and lagoons located within the plant boundary. There is a marshy area, called the Tupelo Swamp, just south of the confluence of Bayou and Little Bayou Creeks. The smaller surface-water bodies are expected to have only localized effects on the regional groundwater flow pattern.

Bayou Creek is a perennial stream with a drainage area of approximately 18.6 mi² that flows generally northward to the Ohio River from approximately 2.5 mi south of the plant. Little Bayou Creek, which becomes a perennial stream north of the plant due to PGDP discharges, originates within the WKWMA and flows northward to the Ohio River. The approximate drainage area of Little Bayou

3.0: PGDP Environmental Setting

Creek is 8.5 mi². The confluence of the two creeks is approximately 3 mi north of the plant site (as measured over land), just upstream of the location at which the creeks discharge into the Ohio River. The drainage areas for both creeks generally are rural and located mostly within the properties of the WKWMA, PGDP, and the TVA Shawnee Steam Plant. However, they receive surface drainage from numerous swales that drain residential and commercial properties. A major portion of the flow in both creeks north of the PGDP is effluent water from the plant, discharged through Kentucky Pollutant Discharge Elimination System-permitted outfalls.

The U.S. Geological Survey (USGS) maintains gauging stations on Bayou Creek, 4.1 and 7.3 river-mi from the Ohio River, and a station on Little Bayou Creek, 2.2 river-mi upstream from its confluence with Bayou Creek. The mean monthly discharge at Bayou Creek, including plant discharge, varies from 6.5 to 60.7 cubic feet per second (ft³/s). The mean monthly discharge on Little Bayou Creek, including plant discharge, ranges from 0.89 to 33.5 ft³/s.

Two studies have investigated the dynamics of interaction between surface water and groundwater in Bayou and Little Bayou Creeks. The USGS performed a seepage survey in Bayou and Little Bayou Creeks on August 15 and 16, 1989. Mr. Eric Wallin monitored indicators of seepage between the creeks and groundwater during the period from July 22, 1996, through October 12, 1997, as the subject for a Master of Science thesis at the University of Kentucky.

The 1989 USGS study determined a point on both Bayou and Little Bayou Creeks where the creeks changed from losing streams (Bayou Creek), or streams of no groundwater interaction (Little Bayou Creek), to gaining streams. On Bayou Creek, the gaining reach began approximately 3.5 river-mi upstream from the Ohio River. On Little Bayou Creek, the point where the creek became a gaining stream was located approximately 2.6 river-mi upstream from the Ohio River. The USGS researchers noted channel-bank seeps along the lower reaches of both creeks.

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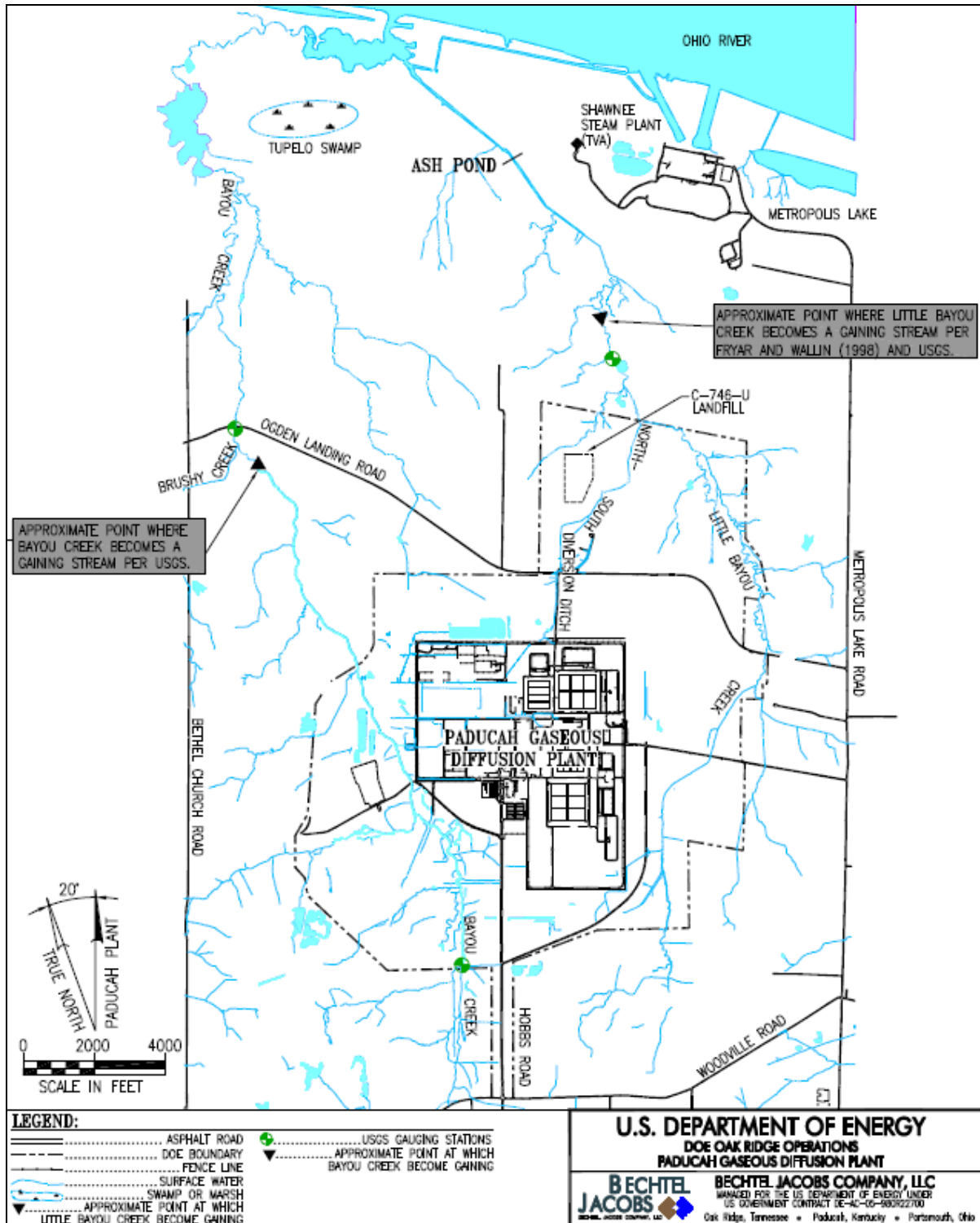


Figure 3-4. Surface Water Features in the Vicinity of the PGDP

3.0: PGDP Environmental Setting

The 1996–1997 study by Wallin assessed both spatial and temporal trends in stream-to-groundwater interaction along the creeks. This study assessed Bayou Creek from south of the PGDP to the Ohio River and Little Bayou Creek from the plant outfalls to the river. The investigation found that the magnitude of seepage varied with season, but it concurred with the 1989 survey location of the inflection point on Little Bayou Creek where the stream begins to gain. The Wallin study also found that gaining reaches on Bayou Creek are limited to the area south of the PGDP and the area near the Ohio River. Man-made drainages receive storm water and effluent from the PGDP. The plant monitors 17 outfalls, which have a combined average daily flow of approximately 4.9 million gallons (gal) per day. Water flow in some of these ditches is intermittent based on seasonal rainfall. A significant man-made drainage is the North-South Diversion Ditch (NSDD). The NSDD served as a major effluent channel from the industrialized PGDP until the mid-1990s when process water was diverted to treatment systems. Currently, the part of the NSDD located outside the secure area of the PGDP carries surface runoff to Little Bayou Creek.

3.1.5.2 Groundwater Hydrology

The Jackson Purchase Region is characterized by a thick sequence of unconsolidated Cretaceous through Holocene period sediments deposited on an erosionally truncated Paleozoic surface. The flow system in the vicinity of the PGDP exists primarily within unconsolidated sediments.

The regional groundwater flow systems occur within the Mississippian bedrock, Cretaceous McNairy Formation, Eocene sands, Pliocene terrace gravel, Pleistocene lower continental deposits, and upper continental deposits. Terms used to describe the hydrogeologic flow system are the Bedrock Aquifer, McNairy Flow System, Eocene Sands and Terrace Gravel, the Regional Gravel Aquifer (RGA), and the Upper Continental Recharge System (UCRS). Specific components for the regional groundwater flow system have been identified and are defined in the following subsections (refer to Figure 3-5).

3.1.5.2.1 Bedrock Aquifer

Limestone, which is believed to be Mississippian-age Warsaw Limestone, subcrops beneath the PGDP. Groundwater production from the bedrock aquifers comes from fissures and fractures and from the weathered rubble zone near the top of the bedrock. The bottom of the rubble zone generally marks the base of the active groundwater flow system beneath PGDP.

3.1.5.2.2 McNairy Flow System

This component, formerly termed the “deep groundwater system,” consists of the interbedded and interlensing sand, silt, and clay of the Cretaceous McNairy Formation. The sand in the McNairy Formation is an excellent aquifer in the southeastern part of the Jackson Purchase Region;

3.0: PGDP Environmental Setting

however, near the PGDP, the McNairy Formation contains significant amounts of silt and clay. Reported hydraulic conductivities for the McNairy Flow System range from $1.4\text{E-}8$ to $4.7\text{E-}2$ centimeters per second (cm/s). Regionally, the McNairy Formation recharges along areas of outcrop in the eastern part of the region, near Kentucky Lake and Lake Barkley. Water movement is north and northwest toward discharge areas in Missouri and along the Ohio River.

The McNairy Formation subcrops beneath the plant at depths ranging from approximately 100 to 350 ft. Overall, sand facies account for 40–50% of the total formation thickness of approximately 225 ft. The upper and middle McNairy members in the area of the PGDP are predominately silty and clayey fine sands. However, where the RGA is in direct hydraulic connection with coarser-grained sediments of the McNairy Formation, the McNairy flow is coincident with that of the RGA.

3.1.5.2.3 Terrace Gravel and Eocene Sands

Pliocene-age gravel deposits and Eocene sands overlie the Paleocene Porters Creek Clay in the southern portion of the DOE-owned property. A water table flow system developed in these units provides some through-flow to the north, across the Porters Creek Clay Terrace. Most of this through-flow is realized east of the PGDP, where the Pliocene Terrace Gravel is thickest adjacent to the Porters Creek Clay Terrace. The water table flow systems, immediately south and west of the PGDP, generally discharge to Bayou Creek because of the shallow depth of the Porters Creek Clay in those areas. However, closer to the northern limit of the terrace, through-flow provides recharge to the RGA. Reported hydraulic conductivities for these flow systems range from $1\text{E-}6$ to $1.4\text{E-}3$ cm/s.

3.1.5.2.4 Regional Gravel Aquifer

The RGA consists primarily of the coarse sand and gravel facies of the lower continental deposits. Permeable sands of the upper continental deposits and the McNairy Formation, where they occur in contact with the lower continental deposits, are included in the RGA. The RGA is found throughout the plant area and to the north, but pinches out to the south, southeast, and southwest along the slope of the Porters Creek Clay terrace. Regionally, the RGA includes the Holocene-aged alluvium found adjacent to the Ohio River.

The RGA is the primary aquifer beneath the PGDP and is the dominant groundwater flow system in the area extending from the PGDP to the Ohio River. Regional groundwater flow within the RGA trends north-northeast toward a base level represented by the Ohio River. East-west heterogeneities within the lower continental deposits and leaks from the PGDP utilities cause groundwater flow to be directed locally to the northeast and northwest of the plant. Differences in permeability and aquifer thickness also affect the hydraulic gradient. Low gradients in the

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north-central portion of the plant site are the result of a thick section of the RGA containing higher fractions of coarse sand and gravel. Northward, near the Ohio River, the hydraulic gradient increases as a result either of a thinner section of RGA or of low-permeability bottom sediments in the Ohio River. The hydraulic gradient varies spatially but is on the order of 1.0E-4 to 1.0E-3 meters per meter (m/m). Hydraulic conductivities from the RGA have been reported as ranging from 1.0E-4 to 1.0 cm/s.

The RGA is the dominant pathway by which groundwater contamination migrates offsite. Contamination is also found in the upper portions of the McNairy Formation at the PGDP. However, the greater hydraulic conductivities in the RGA made the RGA the migration pathway of greatest importance in DOE 2003.

3.1.5.2.5 Upper Continental Recharge System

The UCRS consists of a thick, surface loess unit and the upper continental deposits. Hydrogeologists at the PGDP have differentiated the UCRS into three general horizons, or Hydrogeologic Units (HUs), which are as follows:

- HU 1*—an upper silt and clay interval (the surface loess unit)
- HU 2*—an intervening interval of common sand and gravel lenses
- HU 3*—a lower silt and clay interval

Groundwater flow in the UCRS is predominantly downward into the RGA, hence the term “recharge system.” Vertical hydraulic gradients generally range from 0.5 to 1 m/m where measured by wells completed at different depths in the UCRS. The presence of steep, but undetermined, vertical gradients for most areas of PGDP has limited the ability to map a water table at the PGDP. However, the available UCRS well network is sufficient to determine the main features of the water table. Regionally, the thickness of the saturated UCRS ranges from 0 to 50 ft. Measurements of UCRS hydraulic conductivity range from 1.7E-08 to 3.2 cm/s. The range of eight orders of magnitude reflects the varied textures of the UCRS matrix.

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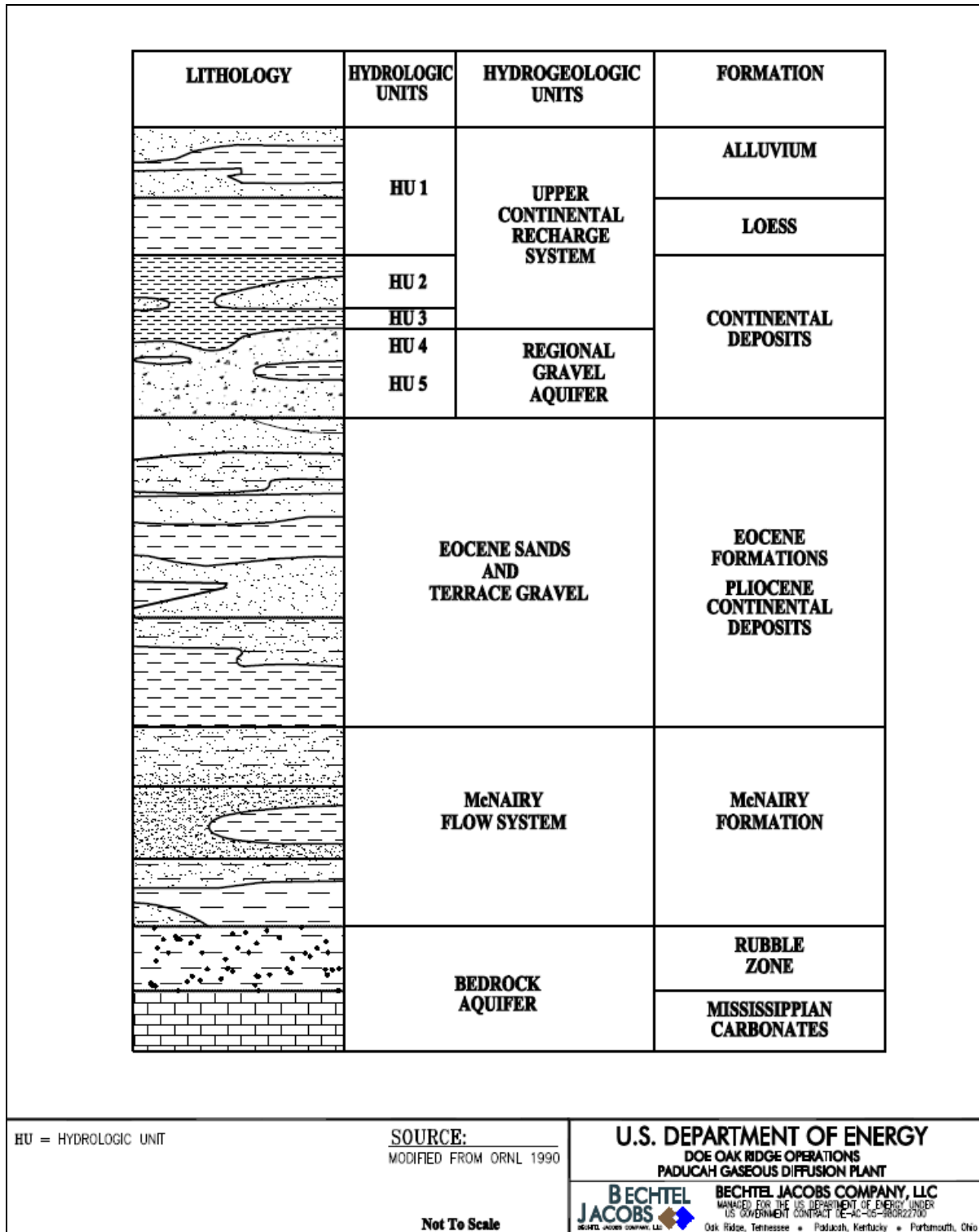


Figure 3-5. Hydrogeologic Units Beneath the PGDP

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3.1.6 ECOLOGICAL RESOURCES

The PGDP and surrounding DOE-owned property are located in the Interior Low Plateau, Shawnee Hills Section of the Eastern Broadleaf Forest (Continental) Province of the Hot Continental Division of the Humid Temperate Domain. The vegetation types typical of this ecoregion are oak-hickory forests in the uplands and oak-gum-cypress forests in the bottomlands. The floodplain of the Ohio River in this area is dominated by sycamore, Kentucky Coffeetree, sugar berry, and honey locust with local tupelo and cypress swamp communities. Due to anthropogenic disturbances, the landscape now is a mosaic of primarily forest and agricultural lands. The ecological resources—i.e., terrestrial and aquatic flora and fauna, wetlands, and Threatened and Endangered (T&E) species—in the PGDP vicinity are briefly summarized below.

3.1.6.1 Terrestrial Systems

The upland habitats in the PGDP area support a variety of plant and wildlife species. Because much of the DOE-owned property and WKWMA terrestrial habitat is managed for multiple uses, the diversity of habitat is excellent. Forest and shrub tracts alternate with fencerows and transitional edge habitats (ecotones) along roads and transmission-line corridors. Fencerow communities are dominated by elm, locust, oak, and maple, with an often thick understory of sumac, honeysuckle, blackberry, and grape. Herbaceous growth in these areas includes clover, plantain, and numerous grasses. The numerous ditches, upland embankments along streams, and open areas around ponds in the area also provide diversity of habitat for wildlife and for recreational hunting.

3.1.6.1.1 Vegetation

The terrestrial community is described by the dominant vegetation sites that characterize the community. The communities range from oak-hickory forest, in areas that have been relatively undisturbed, to managed fencerows and agricultural lands. Detailed investigations of vegetation have been conducted for Ballard and McCracken Counties in Kentucky by the WKWMA and the U.S. Army Corps of Engineers (USACE). Significant areas of the DOE-owned property and WKWMA include vegetation managed for consumption by wildlife, especially deer. In addition, 26% of the total land area of Ballard County and 24% of McCracken County are designated as commercial forestland. Most of the area in the vicinity of the PGDP has been cleared of vegetation at some time. Approximately 2,000 acres in the WKWMA consist of old field grasslands. Approximately 800 acres within the WKWMA are in scrub or shrub habitat. The KDFWR staff mows 600 to 700 acres; control burns 200 to 400 acres; plants 150 acres of food plots (for wildlife); and sprays, strip-discs, or otherwise actively manages an additional 100 to 500 acres annually on the WKWMA.

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3.1.6.1.2 Wildlife

Wildlife commonly found in the PGDP area consists of species indigenous to open grassland, thickets, and forest habitats. Observations by ecologists and WKWMA staff have provided a qualitative description of wildlife communities likely to inhabit the vegetation communities in the vicinity of PGDP. Open herbaceous areas are frequented by rabbits, mice, and a variety of other small mammals. Birds include red-winged blackbirds, quail, sparrows, and predators such as hawks and owls. In ecotones (including fencerows, low shrub, and young forests), a variety of wildlife is present including opossum, vole, mole, raccoon, and deer. Birds typical in the ecotones include red-winged blackbird, loggerhead shrike, mourning dove, northern bobwhite quail, wild turkey, northern cardinal, and western meadowlark. Several groups of coyotes also reside in the vicinity of the PGDP. In mature forests, squirrel, various songbirds, and great horned owls may be present. The primary game species hunted for food in the area are deer, wild turkey, northern bobwhite quail, rabbit, and squirrel. Opossums and raccoons are hunted for dog training and their pelts. Much of the area is attractive to game and nongame species because of the intense management program for game that has been implemented in the WKWMA.

3.1.6.2 Aquatic Systems

Both Bayou and Little Bayou Creeks and tributaries support a variety of aquatic life, including several species of sunfish, as well as spotted and largemouth bass, bullheads, and creek chub. Inhabitants of shallow streams, characteristic of the two main area creeks, are dominantly bluegill, green and longear sunfish, and central stonerollers.

In addition to stream habitats, approximately 13 fishing ponds are located primarily in the WKWMA. Most of the ponds north of the PGDP are used for public fishing. Ponds in the former Kentucky Ordnance Works (KOW) area have been posted with consumption warnings, due to contamination from the former KOW operations. Pond areas generally are dominated by largemouth bass, bluegill, and to a lesser extent, green sunfish. Prior to 1990, Little Bayou Creek also was fished; however, due to the detection of elevated concentrations of polychlorinated biphenyls (PCBs) in fish taken from Little Bayou Creek, consumption warnings have been posted. Aquatic habitats are used by muskrat and beaver. Many species of water birds, including wood duck, geese, heron, and species of migratory birds, also use these areas. Numerous other smaller ponds and abandoned gravel pits usually contain water and may have functioning ecosystems.

3.1.6.3 Wetlands

Habitats that have soil and hydrology capable of supporting vegetation adapted for hydric environments are considered wetlands. These habitats include marshes (wetlands dominated by herbaceous species) and swamps (wetlands dominated by woody species), as well as many other

3.0: PGDP Environmental Setting

ecotones between terrestrial and aquatic habitats. Near the PGDP, there are numerous areas where these conditions prevail, particularly in the region adjacent to the Ohio River. Within the WKWMA, approximately 4,000 acres have been identified as having hydric soil capable of supporting wetlands. Some of these systems include a special-status species, the water hickory. Approximately 400 acres of this area are Tupelo Swamp, and another 600 acres are bottomland hardwood. The Tupelo Swamp, which is located near the PGDP, is considered unusual by state and federal land managers and is thought to be only one of three similar systems left in the United States. Most of the remainder of the wetlands in the PGDP vicinity is in agricultural use or is in some stage of succession to wetland scrub. Other wetland habitats are found associated with the shorelines of ditches and creeks (riparian vegetation), although many of these are incised and have only marginal areas of wetlands. Most ponds also include shallow wetland systems along their shorelines and along contiguities with bottomland hardwood systems.

The 1994 USACE environmental investigations identified 11,728 acres of wetlands surrounding the PGDP. This investigation identified and grouped wetlands into vegetation cover types encompassing forested, scrub/shrub, and emergent wetlands. Wetlands inside the plant security fence are confined to portions of drainage ditches traversing the site. Functions and values of these areas inside the plant as wetlands are low to moderate with regard to groundwater recharge, floodwater retention, and sediment/toxicant retention. Other functions and values such as wildlife habitat/benefits are low.

Flooding is associated with the Ohio River, Bayou Creek, and Little Bayou Creek. The majority of overland flooding is associated with the Ohio River floodplain. Bayou and Little Bayou Creek flooding is generally confined to the areas within, and immediately adjacent to, the channels of these streams. A floodplain analysis performed by USACE in 1994 found that much of the built-up portions of the plant lie outside the 100- and 500-year floodplains of these streams.

3.1.6.4 Threatened and Endangered Species

Potential habitat for federally listed T&E species was evaluated for the area surrounding PGDP during the 1994 USACE environmental investigation of the PGDP and inside the fence of the PGDP during the 1994 investigation of sensitive resources at the PGDP. No T&E species or potential habitat for any T&E species was observed during the inside-the-fence investigation. In 1999, five Indiana bats were captured near the lower downstream reaches of Bayou Creek.

Eleven federally listed, proposed, or candidate species have been identified as potentially occurring at or near the PGDP. None of the species has been reported as sighted on the DOE-owned property. Potential summer habitat exists on DOE-owned property for the Indiana bat based on roosting studies, and Indiana bats have been captured in the vicinity. Suitable forage habitat for the

3.0: PGDP Environmental Setting

Indiana bat is present throughout the DOE-owned property. A subadult Copperbelly water snake was caught in the Tupelo Swamp on the WKWMA in the summer of 2000.

3.2 WEST KENTUCKY WILDLIFE MANAGEMENT AREA

The information provided in this section refers to general aspects of WKWMA property surrounding the PGDP. However, for purposes of the soil guideline derivation, only DOE-owned property outside the limited area described previously, will be relevant to the ORISE dose evaluation and soil guideline derivation work effort. Refer to Figure 1-2.

The WKWMA includes a 2,781-acre (1,125-hectare) buffer zone that surrounds the PGDP. The WKWMA is accessible from Dyke Road, Ogden Landing Road, McCaw Road, and Woodville Road. Within the WKWMA are signs denoting DOE property. This area supports a variety of ecological resources including vegetation, wildlife, aquatic regions, wetlands, and threatened and endangered species. The area is open to the public and is a popular location for local sports, fishing, and hunting. Deer, fowl, turtles, fish, and small mammals such as raccoons are some of the animals caught in the area. Both Bayou and Little Bayou Creeks, and tributaries (which are relevant to this Plan), support a variety of aquatic life. In addition to stream habitats, approximately 13 fishing ponds are located near PGDP, primarily in the WKWMA. Most of the ponds north of PGDP are used for public fishing. Sports enthusiasts tend to come from a wide area within the region, whereas subsistence users tend to live near the city of Paducah. Camping is not a significant recreational activity. Currently, the WKWMA Manager resides on the WKWMA.

Most of the area within the WKWMA has been cleared of vegetation at some time. Approximately 2,000 acres consist of old field grasslands. Approximately 800 acres are in scrub or shrub habitat. The KDFWR mows 600 to 700 acres; handles controlled burns on 200 to 400 acres; plants 150 acres of food plots (for wildlife); and sprays, strip-discs, or otherwise actively manages an additional 100 to 500 acres annually on the WKWMA.

The WKWMA includes the former KOW, where abandoned bunkers and other debris associated with World War II era munitions production still exist. Ponds in this area have been posted with consumption warnings, due to contamination from operations at the KOW. The former KOW's remedial investigation and cleanup are being managed by the USACE. Some of the old bunkers are used for hunting clubs, dog pens, and horse barns. Six ponds (or gravel pits), which are used for fishing, are part of the USACE's investigation and cleanup. Mercury advisories for designated fish remain posted at ponds and gravel pits.

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4.1 TARGET DOSE CONSTRAINTS

As introduced in Section 1.5, “Introduction to the Approach,” DOE’s primary public dose limit is 100 mrem/yr above background; however, DOE-PPPO adopted 1, 15, and 25 mrem/yr dose constraints (above background) in developing soil guidelines for the “Property.” The 1 mrem/yr dose constraint is referred to as a “walk away” dose. If this dose constraint is achieved, no further remedial actions are required by the DOE. The remaining dose constraints—15 and 25 mrem/yr—originated from two primary sources, respectively:

- EPA OSWER No. 9200.4-18 (EPA 1997)
- DOE Order 458.1 (DOE 2011)

Soil guidelines associated with doses greater than 1 mrem/yr, but less than or equal to 100 mrem/yr, require approvals involving a DOE Secretarial Officer in consultation with the Chief Health, Safety and Security Officer. DOE Order 458.1 (Paragraph 4.k.(2)) states the following regarding dose constraints: “Unless alternative dose constraints are approved by issuance of a directive or memorandum by the Chief Health, Safety and Security Officer or for [National Nuclear Security Administration] NNSA, the Cognizant Secretarial Officer in consultation with the Chief Health, Safety and Security Officer, the following dose constraints for DOE residual radioactive material must be applied to each specific clearance of property for any actual or likely future use of the property:

- (a) Real property—a TED of 25 mrem (0.25 mSv) above background in any calendar year;
- (b) Personal property—a TED of 1 mrem (0.01 mSv) above background in any calendar year.”

4.2 DOSE MODELING ASSESSMENT GENERAL BASIS

The following general conditions formed the basis for the dose modeling assessments:

- Both deterministic and probabilistic evaluations were performed. The most recent version of RESRAD was used for this assessment. Note that only deterministic outputs were used to derive soil guidelines. Refer to Section 4.9, “Uncertainty (Probabilistic) Analysis” for information on the use of probabilistic analysis.
- The single radionuclide soil guidelines generated by the RESRAD code are nuclide-specific concentrations in pCi/g that will comply with a user-selected radiation dose limit. In this report, the term “single radionuclide soil guidelines” is used to reflect the output of the RESRAD code.

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- Current and future uses of the “Property” were considered in the selection of modeled receptors. Three different receptors were identified for evaluation.

4.3 CONCEPTUAL SITE MODEL

The CSM is a fundamental and critical component of any dose modeling project. It addresses exposure pathways, receptor selection, and influences subsequent inputs to the selected dose modeling codes. For this project, the CSM was developed using available information for the “Property,” evaluation of plausible receptors and exposure pathways, and consideration of target dose constraints and radionuclides. Particular references included, but were not limited to, the *Update to the End State Vision for the Paducah Gaseous Diffusion Plant Paducah, Kentucky* (2007 update) (DOE 2008b).

The CSM was developed using available environmental information; evaluation of plausible receptors and exposure pathways; and consideration of target dose constraints, the public dose limit, and site radionuclide contaminants of concern. DOE-PPPO concurrence of the ORISE CSM was provided.

The ORISE project-specific CSM is provided in Figure 4-1. Essential components included the originating and secondary sources of the contamination, primary and secondary release mechanisms, transport media, receptors, and exposure routes. The latter included multiple exposure routes considered by the code: incidental soil ingestion; ingestion of plants, meat, dairy, and drinking water; dust inhalation, and external gamma.

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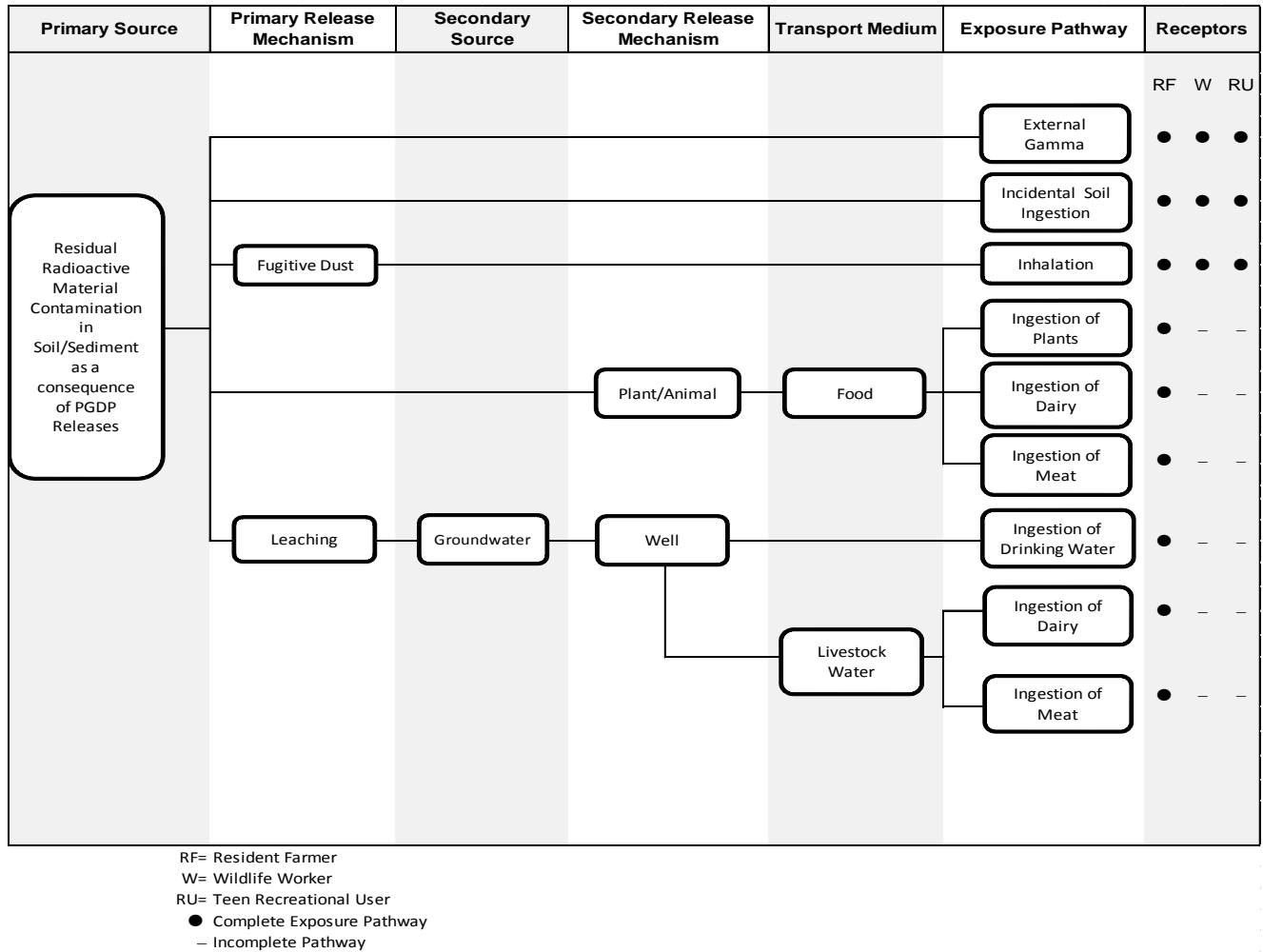


Figure 4-1. Conceptual Site Model for the PGDP DOE-Owned Property Outside the Limited Area

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4.4 RECEPTOR SELECTION, SCENARIOS, AND PATHWAYS

Receptor-specific scenarios and exposure pathways were developed based on the model described in the project Analytical Plan.

Receptors originally evaluated by ORISE consisted of:

- Recreational User—hunter (adult)
- Recreational User—fisherman (adult)
- Recreational User—hiker, jogger, horseback rider, skeet shooter, etc. (teen)
- Wildlife Worker (adult)
- Resident Farmer (adult)

As described below, three receptor specific scenarios were ultimately selected for further evaluations.

4.4.1 RECEPTORS

4.4.1.1 Resident Farmer (Adult)

This individual is assumed to be an adult who spends 350 days per year for 24 years on the contaminated site (DOE 2009a). The individual spends 8 hours per day outside and 16 hours per day inside, which results in outdoor and indoor fractions of 0.32 and 0.64, respectively. Under this scenario, the Resident Farmer builds a house, grows crops, and raises livestock on top of the contaminated zone/“Property.” All the water for drinking, household use and livestock is obtained from an onsite well; however, water for irrigation is obtained from an uncontaminated surface source. Ingestion of aquatic food is excluded in this scenario. Exposure pathways included incidental soil ingestion; consumption of home-grown fruits and vegetables, meat and dairy products, and drinking water; dust inhalation; and external gamma.

4.4.1.2 Recreational User (Teen)

Under this current use scenario, a teen Recreational User participates in several recreational activities such as horseback riding, jogging, hiking, cycling, etc. A teen is considered to be representative of the general public, and particularly representative of a recreationist. This teenager spends 5 hours per day, 140 days per year for 12 years on the contaminated site (DOE 2009a). According to DOE 2009a, the teen Recreational User spends more time in recreational activities compared to an adult. As a result selecting a teenager is a more conservative approach than selecting an adult in this case. Exposure pathways included external gamma, dust inhalation, and incidental soil ingestion. Although ORISE originally considered three separate Recreational User scenarios, it was determined

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that the food ingestion pathways that primarily differentiated the scenarios were incomplete for the following reasons:

- Flow within the creeks at PGDP is predominantly from effluents under normal conditions. Effluents from PGDP operations constitute ~85% of the normal flow in Bayou Creek and nearly 100% of the normal flow in Little Bayou Creek (Kornegay et al. 1991) as referenced in DOE 2008b. Once plant operations cease, flow in Bayou Creek will be much reduced, and flow in Little Bayou Creek will be ephemeral.
- External gamma is expected to be the primary pathway by which wildlife would be exposed. This pathway would not cause a buildup of radioactive material in deer or other game. Uptake in plants from soil/water contamination is minimal; therefore, the primary wildlife exposure pathway is gamma radiation.

As a result, a single Recreational User was modeled in conjunction with soil guideline derivation for the “Property.”

4.4.1.3 *Wildlife Worker (Adult)*

This particular terminology is used in several SERs reviewed for this report. The term “Wildlife Worker” refers to an individual that currently works for the WKWMA on land licensed to the WKWMA from the DOE. Typical work efforts include maintaining infrastructure (e.g., roads, bridges, buildings, fences, etc.), area patrols, and supporting wildlife management. The latter work includes some crop raising, other planting, and burning.

The Wildlife Worker spends 8 hours per day outside, 185 days per year for 25 years on the contaminated site (DOE 2009a). This receptor shares some common features with a Resident Farmer (soil ingestion rate). Exposure pathways included external gamma, dust inhalation, and incidental soil ingestion.

4.4.2 *EXCLUSION OF THE RADON PATHWAY*

Dose limits for members of the public are presented in DOE Order 458.1. Specifically, the public dose limits are described in Paragraph 4.b., and apply to doses from exposures to radiation sources from radiological activities, including remedial actions and activities using Technologically Enhanced Naturally Occurring Radioactive Material (TENORM), released by DOE processes and operations. The dose limits also apply to the doses to individuals who are exposed to radiation or contamination by radionuclides at properties subsequent to remedial action and clearance of the property.

DOE Order 458.1 in Paragraph 4.b.(1)(a)1, excludes the dose from radon and its decay products in air [Radon is regulated separately e.g., under Paragraphs 4.f. and 4.h.(1)(d) in this Order and under

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Title 40 Code of Federal Regulations (CFR) Part 61, Subparts Q and T] from the primary dose limit. Radon and its decay products are addressed independently from the primary dose limit in Paragraph 4.f., as follows:

“Airborne Radioactive Effluents. Radiological activities must be conducted in a manner such that the release of radioactive material to the atmosphere will:

- (1) Be evaluated using the ALARA process established in paragraph 4.d. of this Order;
- (2) Not cause radon-222 flux rates to exceed $20 \text{ pCi (0.7 [becquerel] Bq) m}^{-2} \text{ sec}^{-1}$ averaged over the surface area overlaying waste, including the covering or other confinement structures, wherever radium-226 wastes are accepted for storage or disposal (See 40 CFR Part 61, Subparts Q and T);
- (3) Meet compliance agreements under 40 CFR Part 61, Subparts H, Q, and T;
- (4) Not cause the radon-220 and radon-222 decay product concentration, including background, to exceed 0.03 [Working Levels] WL in buildings that are being released from DOE control. Further, a reasonable effort must be made to meet a 0.02 WL generic guideline for annual average radon-220 and radon-222 decay product concentration, including background, in such buildings; and
- (5) Not exceed 3 pCi/L annual average radon-220 and radon-222 concentration, not including background, at the site boundary if DOE activities release radon-220 and radon-222 or their decay products.”

Radon modeling is highly uncertain due to the localized environmental variability and problems with predicting future construction design. Modeling uncertainties are, therefore, considered too great to accurately predict results distinguishable from background radioactivity in future hypothetical scenarios, and remediation to radium standards is assumed sufficient to address radon standards and guidelines. Consequently, remediation to dose-based radium limits is assumed sufficient to satisfy the previously described generic guidelines for airborne radon decay products and the radon pathway is not considered in the derivation of single radionuclide soil guidelines. Although ORISE is not proposing radium clean up criteria, the single radionuclide soil guidelines for uranium and thorium consider ingrowth of radium and its progeny.

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4.5 COMPUTATIONAL MODELING—RESRAD DOSE MODELING SOFTWARE

The RESRAD code was developed by ANL over 20 years ago and has been updated several times since its introduction. RESRAD is a computer model used to evaluate radiation doses and excess cancer risks to an individual exposed from residual radioactive materials in soil. Approximately 145 “principal” and “associated” radionuclides are included in the *User’s Manual for RESRAD Version 6* (Yu et al. 2001), which remains relevant to the latest user code, Version 6.5. RESRAD contains approximately 140 input parameters. The code is recognized by the DOE (e.g., in DOE Order 458.1) for use in dose modeling evaluations.

The exposure pathways examined by RESRAD—taken from the RESRAD User’s Manual—are illustrated in Figure 4-2.

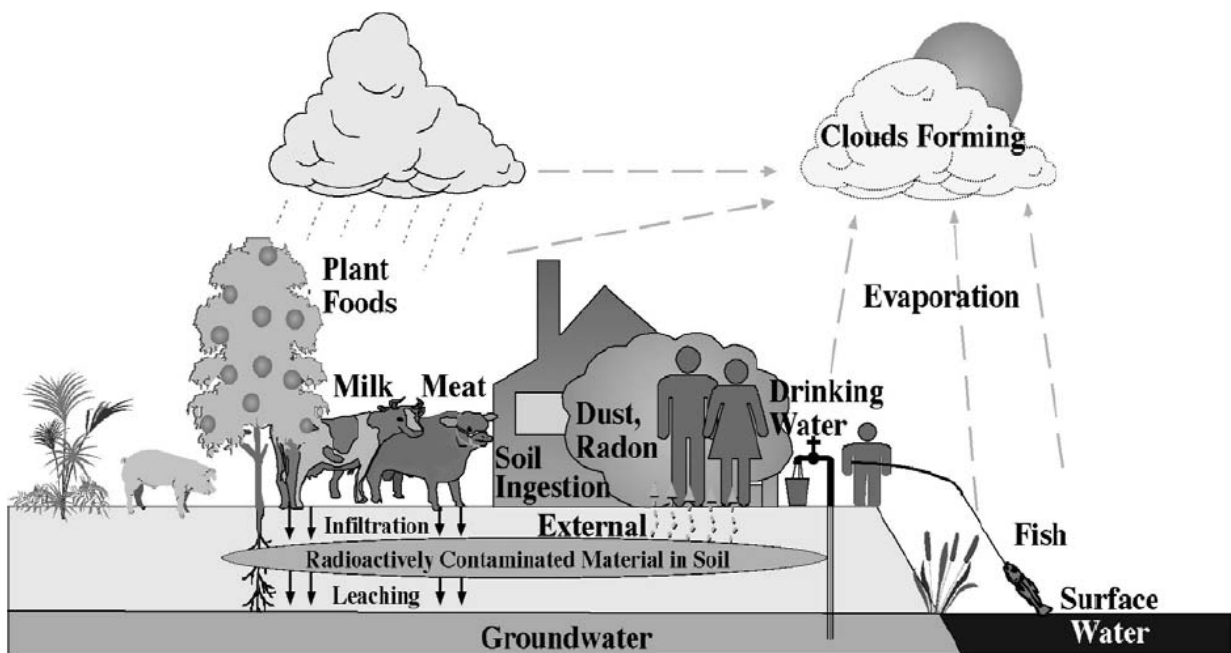


Figure 4-2. RESRAD Exposure Pathways

Note the location of the contaminated material in the figure (i.e., directly below the receptor). The position of the receptor along the horizontal plane can be altered relative to the source, but the receptor always remains within the boundary of primary contamination (i.e., above the source).

4.6 ESTABLISHING PARAMETER INPUTS

Determining appropriate and reasonable model input parameters is an important first step in the derivation of soil guidelines. A review of site records and available references was conducted by personnel with previous dose assessment experience in order to develop a list of defensible inputs.

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Site-specific values, where available, were emphasized and used as input to the code. While site specific inputs are always preferable, it was anticipated that a number of default parameters would be necessary to run the code.

4.6.1 DISCUSSION OF PARAMETERS

The parameters utilized in the code are included in a table of parameters as well as a justification for each input as necessary. This table is provided in Appendix A. The following parameters were selected from the table in order to provide further details that could not be included in the justification section of these tables.

- **Dose Conversion Factors**—The Dose Conversion Factors (DCFs) from the ICRP 60 and 72 libraries (available in the RESRAD code) were utilized in the dose modeling analysis in order to obtain results in TED rather than TEDE. 10 CFR 835 now incorporates ICRP 60 and 68 in support of the TED determinations, but does not incorporate ICRP 72 since this is applicable to members of the public.

The external and internal DCFs from ICRP 60 and 72 libraries, respectively, were used for the analysis. However, it is important to emphasize that ICRP 72 has age-dependent dose conversion factors and that the RESRAD code has age-dependent libraries for ICRP 72 available for selection. The two ICRP 72 libraries used were “Adult” and “Age 15.”

The Adult library was used for all the receptors with the exception of the Recreational User. The Recreational User was considered to be a teenager; therefore, the Age 15 library was applicable. In order to use ICRP 60 in conjunction with the Age 15 library for the Recreational User, it was necessary to create a library in RESRAD by selecting ICRP 60 and the ICRP 72 Age 15 libraries. This had to be done since the RESRAD code automatically adds ICRP 72’s Adult library when ICRP 60 is selected from the drop down menu.

- **Radionuclide Concentrations**—The targeted radionuclides consisted of Am-241, Np-237, Cs-137, Tc-99, Pu-238, Pu-239, Pu-240, Th-228, Th-230, Th-232, U-234, U-235, and U-238. As a result of the processes that led to residual contamination of the “Property,” it was assumed that secular equilibrium does not exist. Unit concentrations of 1 pCi/g for each radionuclide were used. The contaminated zone was treated as a uniformly contaminated area with a single radionuclide concentration at every point (Yu et al 2001). Parent radionuclides and their progeny with a half-life greater than 180 days are used by the code in the computational analysis and are provided in Table 4-1.

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Table 4-1. Targeted Radionuclides and Progeny

Targeted Radionuclides	Progeny*
Am-241	Np-237, U-233, and Th-229
Np-237	U-233 and Th-229
Cs-137	None
Tc-99	None
Pu-238	U-234, Th-230, Ra-226, and Pb-210
Pu-239	U-235, Pa-231, and Ac-227
Pu-240	U-236, Th-232, Ra-228, and Th-228
Th-228	None
Th-230	Ra-226 and Pb-210
Th-232	Ra-228 and Th-228
U-234	Th-230, Ra-226, and Pb-210
U-235	Pa-231 and Ac-227
U-238	U-234, Th-230, Ra-226, and Pb-210

*The default cut-off half life in the RESRAD code includes only the progeny with a half-life greater than 180 days. The cutoff half-life is used to separate the “principal nuclides” from the “associated nuclides” (Yu et al. 2001).

- **Contaminated Zone/ “Property”**—For dose modeling purposes, the primary source of contamination is assumed to be the “Property.” Residual radioactive material contamination is assumed to be spread across this entire “Property” (soil/sediment) by surface deposition as a consequence of PGDP releases. The contaminated zone is assumed to have similar attributes to the UCRS (i.e., type of soil, density, porosity, etc.).
- **Area of Contamination Zone**—In DOE CH-8901, it is assumed that an area of 2 hectares (ha) would be needed to provide sufficient meat and milk, including all forage, for a family of four. As 1 ha is the equivalent of 10,000 square meters (m²), a 2 ha farm comprises an area of 20,000 m². This area was selected as the area of the contaminated zone for all receptors.
- **Thickness of Contaminated Zone**—The contaminated zone may be composed of radioactive material from a variety of sources, including surface deposition from PGDP activities, and volumetrically contaminated soil piles. With DOE-PPPO concurrence, ORISE selected 0.15 meter (m) as the thickness of the contaminated zone as it represents a reasonable thickness considering all potential sources.
- **Contaminated Zone Erosion Rate**—Erosion rates can be estimated by means of the universal soil loss equation. The contaminated zone erosion rate is only significant if and when the cover depth becomes zero (Yu et al. 2001). The cover depth was zero for this analysis; however, the erosion rate was set to 0 m/yr as recommended by DOE-PPPO for conservatism in the

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modeling. This assumes that the contamination will remain on the contaminated site and will not wear away (erode).

- **Irrigation Rate**—The irrigation rate is 0 m/yr for all the receptors. Irrigation in this area of Kentucky is considered to be unlikely. In addition, in the event irrigation is necessary, the water will primarily come from surface water and not from groundwater (well). Information from the USGS shows that surface water is the main source of water used in Kentucky for irrigation (Kenny et al. 2009). Moreover, parameters associated with irrigation of water in RESRAD were set to 0 under the assumption that irrigation would be from an uncontaminated surface water source.
- **Unsaturated Zone**—An unsaturated zone is defined as a horizontal, uncontaminated layer located between the contaminated zone and the aquifer. A portion of the UCRS is considered to be the unsaturated zone. Although there may be more than one unsaturated zone associated with the UCRS, the hydrogeological attributes of these zones are similar enough that they may be modeled as a single zone for this project. This approach was confirmed during preliminary computations wherein varying a number of attributes, including thickness, density, hydraulic conductivity, etc., did not change the generated DSRs.

4.6.2 PARAMETER SELECTION HIERARCHY

Parameters input to the dose modeling codes required a selection hierarchy. For this project, the following general selection order was utilized:

4.6.2.1 Site-Specific Parameters

Site-specific parameters are preferred over default values when the goal is to calculate reasonable exposures. The parameters were considered to be site-specific if they reflected attributes unique to the “Property,” were obtained or derived from the references below, or were provided by DOE-PPPO. In some instances, site-specific values were converted (via calculation) into units appropriate for the dose modeling code.

The references used to obtain site-specific parameters included the following:

DOE 2009a. *Methods for Conducting Risk Assessments and Risk Evaluations at the Paducah Gaseous Diffusion Plant Paducah, Kentucky Volume 1. Human Health*, DOE/LX/07-0107&D1/V1 U.S. Department of Energy, Paducah, KY.

DOE 2003. *Risk and Performance Evaluation of the C-746-U Landfill at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* DOE/OR/07-2041&D2R1, U.S. Department of Energy, Paducah, KY.

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PRS 2008a. *Paducah Site Annual Site Environmental Report for Calendar Year 2006*, PRS-ENM-0034, Volume I, Paducah Remediation Services, LLC, Paducah, KY.

4.6.2.2 Calculated Input Values

Some parameters were calculated based on site-specific information obtained from the previously mentioned references. The equations used to perform these calculations were obtained from the following references:

Yu, C., C. Loureiro, J. J. Cheng, L.G. Jones, Y. Y. Wang, Y. P. Chia, and E. Faillace, 1993. *Data Collection Handbook to Support Modeling Impacts of Radioactive Material in Soil*, ANL/EAIS-8, Argonne National Laboratory, Environmental Assessment and Information Sciences Division, Argonne, IL.

King, D. A. and K. Keil 2006. "Comparison of Standard Radiological Risk Models and Using RESRAD to Derive Generic Risk-Based Area Factors for Final Status Surveys", *Risk Analysis*, Vol. 26, No. 1, pp. 175-183.

4.6.2.3 Literature Values

When site-specific values could not be determined using one of the previously mentioned sources, a search of pertinent literature was conducted and, in the absence of site-specific values, these literature values were selected over RESRAD default values.

The following reference contained values considered appropriate for the site:

Yu, C., C. Loureiro, J. J. Cheng, L. G. Jones, Y. Y. Wang, Y. P. Chia, and E. Faillace, 1993. *Data Collection Handbook to Support Modeling Impacts of Radioactive Material in Soil*, ANL/EAIS-8, Argonne National Laboratory, Environmental Assessment and Information Sciences Division, Argonne, IL.

4.6.2.4 Default Parameters

Default values are often required out of necessity as site-specific values may be unknown or costly to determine. However, they are the last choice in these evaluations. In several cases, RESRAD defaults were considered necessary or adequate for this project.

These values were obtained from the reference:

Yu, C., A.J. Zielen, J.J. Cheng, D.J. LePoire, E. Gnanapragasam, S. Kamboj, J. Arnish, A. Wallo, III, W.A. Williams, and H. Peterson, 2001. *User's Manual for RESRAD Version 6*, ANL/EAD-4, Argonne National Laboratory, Environmental Assessment Division, Argonne, IL.

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4.6.3 DEVELOPMENT OF INPUT PARAMETER TABLES

Input deterministic parameters for the dose modeling code utilized in this project were captured in table format. The table was populated with recommended (and justified) values. The overall objective was to use input values acceptable to the DOE and agreeable to the Commonwealth of Kentucky.

The table included the following components:

- Parameter Name (taken from the software codes)
- Units (time, length, area, volume, density, no units, etc)
- Default Values (specified in the software codes)
- Code-Accepted Values (values the dose modeling code accepts as inputs)
- Receptor Selection
- Deterministic Values
- Parameter Type (physical, behavioral, metabolic)
- Parameter Justification
- Reference(s)

The approach provided in NUREG/CR-6697 (ANL/EAD/TM-98), *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes* (Yu et al. 2000), Table 2.1, *Parameters and Their Default Values Used in Version 6.0 of RESRAD*, was initially followed. As the project progressed, generic inputs provided in the table were replaced with available project-specific information.

The parameter table is included in its entirety in Appendix A.

4.7 DETERMINISTIC ANALYSIS

Once concurrence on the parameter table inputs was received from DOE-PPPO, the values were added to the code. The code was executed to establish deterministic outputs. The outputs are provided in Appendix B and discussed in detail in Section 5.0, “Results and Discussion.”

4.8 SENSITIVITY ANALYSIS

A sensitivity analysis was conducted based on the results of deterministic outputs to identify key parameters that impact total dose and the significance of this impact. In this respect, sensitivity analysis is a powerful tool that can be used to assess the robustness of the results generated by the model and may demonstrate that additional investigations would be beneficial.

In the code, a sensitivity analysis is conducted after the deterministic calculations are completed by taking selected parameters and repeating the entire calculation with the parameter set at

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user-specified extremes (i.e., minimum and maximum values). Only a single test parameter is varied at a time.

Initially, all input values were scrutinized to determine the expected consequence of their use. In some instances, this evaluation was limited to an evaluation by an experienced health physicist; in others, the sensitivity tool in the code was used. Next, sensitive parameters were examined to determine the extent to which they would vary, and a range was developed for each.

In general, physical parameters of the contaminated zone that impacted the external gamma pathway proved to be most sensitive. Several discussions with DOE-PPPO were held regarding sensitive parameters impacting the Resident Farmer and appropriate parameter ranges. Key points of those discussions were the consideration of 10,000 m² as the area of the contaminated zone and 0.03 m for the thickness of the contaminated zone. The 10,000 m² is the code's default value, and 0.03 m potentially describes a layer thickness representative of resuspendable soil as described in Till et al. 1999.

Ultimately, and in order to determine the impact on the dose from these values (i.e., 10,000 m² and 0.03 m), deterministic inputs were multiplied and divided by factors that would ensure that these two values were the minimum values within the sensitivity range. The parameters, deterministic values, factors for developing parameter ranges, and resulting ranges that were considered for sensitivity analysis using the Resident Farmer scenario are presented in Table 4-2.

Table 4-2. Sensitive Parameters and their Ranges for the Most Limiting Receptor

Parameter	Deterministic Value	Factor Used to Multiply and Divide	Range
Area of Contaminated Zone	20,000 m ²	2	10,000 m ² –40,000 m ²
Thickness of Contaminated Zone	0.15 m	5	0.03 m–0.75 m

Specific sensitivity analysis output results are provided in Section 5.0, “Results and Discussion,” and were used to define (narrow) the number of parameters evaluated probabilistically.

4.9 UNCERTAINTY (PROBABILISTIC) ANALYSIS

Due to the demonstrated sensitivity of several parameters, this project employed a probabilistic analysis as a complement to deterministic and sensitivity evaluations.

Probabilistic analysis is the computation of the total uncertainty induced in the output dose as a result of either the uncertainty or the probabilistic nature of the input parameters. This analysis helps determine the relative importance of the inputs in terms of their contributions to total uncertainty.

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Also, the results of uncertainty analysis can be used as a basis for determining if it would be advantageous to obtain additional information or data on input variables (Yu et al. 2001).

Table 4-3 contains the input parameters and type of distribution selected for the probabilistic analysis. The minimum and maximum values correspond to the values used in the sensitivity analysis.

Table 4-3. Parameters Evaluated Probabilistically Using RESRAD for the Most Limiting Receptor

Parameter	Type of Distribution	Minimum Value	Base Value	Maximum Value
Area of Contaminated Zone	Uniform	10,000 m ²	20,000 m ²	40,000 m ²
Thickness of Contaminated Zone	Uniform	0.03 m	0.15 m	0.75 m

All points within an interval having a uniform distribution, also known as the rectangular distribution, are equally likely. The probability density function for the uniform distribution is:

$$f(x) = \frac{1}{b-a} \text{ for } a \leq x \leq b,$$

where a and b are the minimum and maximum values of the range of the random variable considered. The mean and variance of a uniform distribution are $(a + b)/2$ and $(b - a)^2/12$, respectively. If the only available data for a random variable are the minimum and maximum values, the maximum entropy distribution for such a case would be a uniform distribution (Yu et al. 2000). This distribution was selected because only potential lower and upper bounds were available.

Once the parameters and distributions were selected, a sampling technique was specified. Two sampling techniques are available in the code: Latin hypercube sampling (LHS) and simple random sampling. LHS is the default sampling technique and was selected for the uncertainty analyses discussed in this section. It comprises a constrained sampling scheme developed by McKay et al. (1979) as referenced in Yu et al. 2000. In simple terms, sampling accomplished in this manner divides the distribution of each input variable into nonoverlapping regions of equal probability. One sample value is obtained at random from each region on the basis of the probability density function for that region.

The next step in probabilistic analysis is combining the samples. The code allows two methods of grouping (or combining): Random Grouping (RG) and Correlated/Uncorrelated Grouping (CG). Under RG, the samples generated for each of the variables are combined randomly to produce the required number of probabilistic inputs, and it is possible that some pairs of variables may be correlated to some degree in the randomly selected grouping. Under CG, the user specifies the degree of correlation between each correlated variable by inputting the correlation coefficients

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between the ranks of the variables. As the parameters selected for uncertainty analysis were not expected to be correlated, CG was used with a non-specified degree of correlation. This ensured that the variables were treated as being uncorrelated (i.e., having a zero correlation).

Section 5.0, “Results and Discussion,” contains an extended discussion of the probabilistic results.

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5.0: Results and Discussion

5.0: RESULTS AND DISCUSSION

5.1 GENERAL

This section provides a discussion and results of the dose assessments and soil guideline determinations for targeted radionuclides under the exposure scenarios discussed in Section 4.4.1. Many inputs to the modeling code required the use of intensive field and empirical determinations to establish site-specific inputs. While site-specific parameters are preferred, the RESRAD User’s Manual notes that it is not required to completely characterize transport and exposure processes to achieve improved modeling. Therefore, in many cases, default parameters were necessary and considered acceptable for this project, considering many of the parameters evaluated (through the use of sensitivity analyses described next) did not significantly impact the results. Appendix A provides a parameter-by-parameter assessment, including a justification for parameter value selection, for the receptors modeled. Appendix B contains text reports generated by the code called “Summary Reports.”

5.2 DETERMINISTIC RESULTS

The soil guidelines generated by the code for each receptor based on a 1 mrem/yr target dose constraint (above background) are summarized in Table 5-1.

Table 5-1. Soil Guidelines Based on 1 mrem/yr

Radionuclides	Receptors			Results and Pathways for Limiting Receptor		
	Resident Farmer (pCi/g)	Recreational User (pCi/g)	Wildlife Worker (pCi/g)	Most Limiting Soil Guideline (pCi/g)	Time of Peak Dose (yr)	Major Pathways (in descending order of contribution to dose if more than one is listed)
Am-241	1.280E+01	1.959E+02	9.173E+01	1.280E+01	0	External gamma, soil ingestion, plant ingestion
Cs-137	3.622E-01	4.570E+00	2.151E+00	3.622E-01	0	External gamma, meat ingestion, milk ingestion
Np-237	9.729E-01	1.326E+01	6.237E+00	9.729E-01	0	External gamma, plant ingestion, meat ingestion, soil ingestion
Pu-238	1.632E+01	4.120E+02	1.833E+02	1.632E+01	0	Soil ingestion, plant ingestion, meat ingestion
Pu-239	1.493E+01	3.748E+02	1.674E+02	1.493E+01	0	Soil ingestion, plant ingestion, meat ingestion
Pu-240	1.496E+01	3.763E+02	1.681E+02	1.496E+01	0	Soil ingestion, plant ingestion, meat ingestion
Tc-99	4.189E+00	6.648E+04	3.523E+04	4.189E+00	0	Plant ingestion, milk ingestion
Th-228	1.863E-01	1.939E+00	9.151E-01	1.863E-01	0	External gamma
Th-230	2.597E-01	4.270E+00	2.093E+00	2.597E-01	1,000	External gamma, plant ingestion, milk ingestion, meat ingestion, soil ingestion
Th-232	6.995E-02	9.524E-01	4.713E-01	6.995E-02	68.3	External gamma, plant ingestion, milk ingestion, meat ingestion, soil ingestion
U-234	1.383E+01	1.192E+03	6.154E+02	1.383E+01	0	Milk ingestion, meat ingestion, plant ingestion, soil ingestion
U-235	1.645E+00	1.905E+01	9.006E+00	1.645E+00	0	External gamma, milk ingestion
U-238	5.394E+00	8.528E+01	4.098E+01	5.394E+00	0	External gamma, milk ingestion

5.0: Results and Discussion

The code was also run using 15, 25, and 100 mrem/yr (above background) to derive soil guidelines for each receptor that corresponded to the remaining target dose constraints and limits discussed throughout this report. The derived soil guidelines for the Resident Farmer, Recreational User, and Wildlife Worker are presented in Tables 5-2, 5-3, and 5-4, respectively.

Table 5–2. Derived Soil Guidelines for the Resident Farmer

Radionuclides	1 mrem/yr Soil Guideline (pCi/g)	15 mrem/yr Soil Guideline (pCi/g)	25 mrem/yr Soil Guideline (pCi/g)	100 mrem/yr Soil Guideline (pCi/g)
Am-241	1.280E+01	1.920E+02	3.201E+02	1.280E+03
Cs-137	3.622E-01	5.433E+00	9.056E+00	3.622E+01
Np-237	9.729E-01	1.459E+01	2.432E+01	9.729E+01
Pu-238	1.632E+01	2.448E+02	4.080E+02	1.632E+03
Pu-239	1.493E+01	2.240E+02	3.734E+02	1.493E+03
Pu-240	1.496E+01	2.244E+02	3.740E+02	1.496E+03
Tc-99	4.189E+00	6.283E+01	1.047E+02	4.189E+02
Th-228	1.863E-01	2.795E+00	4.658E+00	1.863E+01
Th-230	2.597E-01	3.896E+00	6.493E+00	2.597E+01
Th-232	6.995E-02	1.049E+00	1.749E+00	6.995E+00
U-234	1.383E+01	2.075E+02	3.458E+02	1.383E+03
U-235	1.645E+00	2.468E+01	4.113E+01	1.645E+02
U-238	5.394E+00	8.091E+01	1.349E+02	5.394E+02

Table 5–3. Derived Soil Guidelines for the Recreational User

Radionuclides	1 mrem/yr Soil Guideline (pCi/g)	15 mrem/yr Soil Guideline (pCi/g)	25 mrem/yr Soil Guideline (pCi/g)	100 mrem/yr Soil Guideline (pCi/g)
Am-241	1.959E+02	2.939E+03	4.898E+03	1.959E+04
Cs-137	4.570E+00	6.855E+01	1.142E+02	4.570E+02
Np-237	1.326E+01	1.988E+02	3.314E+02	1.326E+03
Pu-238	4.120E+02	6.181E+03	1.030E+04	4.120E+04
Pu-239	3.748E+02	5.622E+03	9.370E+03	3.748E+04
Pu-240	3.763E+02	5.645E+03	9.408E+03	3.763E+04
Tc-99	6.648E+04	9.972E+05	1.662E+06	6.648E+06
Th-228	1.939E+00	2.909E+01	4.848E+01	1.939E+02
Th-230	4.270E+00	6.405E+01	1.067E+02	4.270E+02
Th-232	9.524E-01	1.429E+01	2.381E+01	9.524E+01
U-234	1.192E+03	1.789E+04	2.981E+04	1.192E+05
U-235	1.905E+01	2.857E+02	4.762E+02	1.905E+03
U-238	8.528E+01	1.279E+03	2.132E+03	8.528E+03

5.0: Results and Discussion

Table 5–4. Derived Soil Guidelines for the Wildlife Worker

Radionuclides	1 mrem/yr Soil Guideline (pCi/g)	15 mrem/yr Soil Guideline (pCi/g)	25 mrem/yr Soil Guideline (pCi/g)	100 mrem/yr Soil Guideline (pCi/g)
Am-241	9.173E+01	1.376E+03	2.293E+03	9.173E+03
Cs-137	2.151E+00	3.226E+01	5.376E+01	2.151E+02
Np-237	6.237E+00	9.355E+01	1.559E+02	6.237E+02
Pu-238	1.833E+02	2.750E+03	4.583E+03	1.833E+04
Pu-239	1.674E+02	2.511E+03	4.185E+03	1.674E+04
Pu-240	1.681E+02	2.521E+03	4.201E+03	1.681E+04
Tc-99	3.523E+04	5.286E+05	8.807E+05	3.523E+06
Th-228	9.151E-01	1.373E+01	2.288E+01	9.151E+01
Th-230	2.093E+00	3.139E+01	5.232E+01	2.093E+02
Th-232	4.713E-01	7.070E+00	1.178E+01	4.713E+01
U-234	6.154E+02	9.229E+03	1.539E+04	6.154E+04
U-235	9.006E+00	1.351E+02	2.251E+02	9.006E+02
U-238	4.098E+01	6.148E+02	1.024E+03	4.098E+03

5.3 DERIVED SOIL GUIDELINES

The soil guidelines in Tables 5-2 through 5-4 are the nuclide-specific concentrations in pCi/g that will comply with the target doses listed for each receptor. The soil guidelines included in these tables reflect above background concentrations of radioactive material. Ultimately, it is the decision of the DOE-PPPO to select the most appropriate soil guidelines for developing the AL request for the "Property." Note that the soil guidelines for the Resident Farmer, Table 5-2, are the most restrictive in all cases.

The 13 modeled radionuclides are historically associated with PGDP operations; however, they do not necessarily represent the radioactive contaminants that are expected to be found in environmental media on the "Property." Historical records, including several volumes of radiological characterization data pertaining to the "Property" (DOE 2008a, DOE 2009c, DOE 2010a, and DOE 2010b), were examined to determine which radionuclides exhibited a reasonable potential to be present in surface soils and sediment. With the exception of an infrequent anomaly, the only contaminants that consistently appear at above background levels during investigations of environmental media on the "Property" are uranium isotopes and Cs-137. As the soil guidelines are primarily intended to assist in planning and guiding cleanup activities, the list of radionuclides for which soil guidelines are selected is reduced to Cs-137, U-234, U-235, and U-238. Note that this does not suggest that the remaining soil guidelines are irrelevant; Table 5-2 should be consulted if other radionuclides are encountered when making decisions as to whether or not a target dose constraint or limit is satisfied.

5.0: Results and Discussion

The reduced list of Resident Farmer soil guidelines for most likely contaminants in surface soil and sediment is provided in Table 5-5. This table includes soil guidelines based on the three target dose constraints (above background) and the primary public dose limit (above background).

Table 5-5. Soil Guidelines for Likely Contaminants

Radionuclides	1 mrem/yr Guideline (pCi/g)	15 mrem/yr Guideline (pCi/g)	25 mrem/yr Guideline (pCi/g)	100 mrem/yr Guideline (pCi/g)
Cs-137	3.622E-01	5.433E+00	9.056E+00	3.622E+01
U-234	1.383E+01	2.075E+02	3.458E+02	1.383E+03
U-235	1.645E+00	2.468E+01	4.113E+01	1.645E+02
U-238	5.394E+00	8.091E+01	1.349E+02	5.394E+02

To ensure that selected soil guidelines were representative of activity concentrations distinguishable from background using standard field instrumentation and techniques, ORISE consulted NRC NUREG-1507, *Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions* (NRC 1998), to make comparisons of soil guidelines against scan minimum detectable concentrations (MDCs). Table 6.4 of the NUREG provides scan MDCs for detectors that would reasonably be used by DOE-PPPO or their contractor(s) to make field comparisons against the soil guidelines. The table includes scan MDCs for Cs-137, depleted uranium, processed uranium and enriched uranium at different percentages. The scan MDC for depleted uranium was selected since it has the most limiting scan MDC. The table lists scan MDCs of 6.4 pCi/g for Cs-137 and 56 pCi/g for depleted uranium (0.34% percent-by-weight U-235) for a 2 in × 2 in Sodium Iodide (NaI) detector.

The scan MDCs were calculated using a number of assumptions. These assumptions are described in detail in NRC 1998 and summarized as follows:

- Background count rate of the detector is 10,000 counts per minute
- Contamination consists of a cylindrical hot spot with a radius of 28 centimeters (cm) (area of 0.25 m²), a depth of 15 cm, and a density of 1.6 grams per cubic centimeter (g/cm³)
- Average height of the detector above the surface during scanning is 10 cm
- Scanning is conducted at a rate of 0.5 m per second, providing an observation interval of 1 second
- Level of performance was selected to be 95% correct detections and a 60% false detection rate, yielding a d' of 1.38

5.0: Results and Discussion

- Surveyor efficiency is 0.5

ORISE concludes that the 1 and 15 mrem/yr soil guidelines in Table 5-5 represent volumetric concentrations that may be below acceptable scan MDCs for standard field instrumentation. Therefore, the 1 mrem/yr values would be inappropriate to select as the derived soil guidelines; the 15 mrem/yr values are more achievable. However, using the 25 mrem/yr values satisfies the Commonwealth of Kentucky regulatory requirements for free release under 902 KAR 100:042, the NRC radiological criteria for unrestricted use under 10 CFR 20.1402 and the DOE target dose constraint for the release and clearance of real property under DOE Order 458.1 Paragraph 4.k. In addition, because the scan MDCs are based on a number of conservative assumptions from NUREG 1507 (e.g., the calculations in NUREG 1507 are for 0.25 m² area and the actual area under the detector may be larger), it is reasonable to expect that field personnel will be able to achieve scan MDCs below the soil guidelines derived for the Resident Farmer against the 25 mrem/yr target dose constraint. These values were used to derive soil guidelines for the “Property.”

RESRAD reports its output in scientific notation to four significant digits. DOE-PPPO was consulted, and for ease of application, soil guidelines for the Resident Farmer based on the 25 mrem/yr target dose constraint were rounded to two significant figures. The rounded soil guidelines in Table 5-6 constitute the derived soil guidelines.

Table 5-6. ORISE-Derived Soil Guidelines for the DOE-Owned Property Outside the Limited Area

Radionuclide	Derived Soil Guidelines (pCi/g)*
Cs-137	9.1
U-234	350
U-235	41
U-238	130

*The derived soil guidelines reflect above background concentrations of radioactive material.

5.4 DISCUSSION OF DERIVED SOIL GUIDELINES

For clarity, additional discussion regarding the ORISE-derived soil guidelines and their attributes is provided as follows:

- Soil guidelines relative to the 25 mrem/yr target dose constraint are on a per-isotope basis. That is, it is expected that implementation of the derived soil guidelines will consider the sum of the soil guideline fractions (unity) if the 25 mrem/yr target dose is to be met. Application of a unity calculation will be discussed in Section 6.0, “Summary, Conclusions, and Application of ORISE-Derived Soil Guidelines.”

5.0: Results and Discussion

- A unity calculation is not needed to comply with DOE’s 100 mrem/yr primary public dose limit. For the most restrictive receptor, each of the derived soil guidelines corresponds to a TED of 25 mrem/yr. If all four radionuclides were present at their respective soil guideline concentrations, the combined dose would be 4×25 mrem/yr, or 100 mrem/yr. Less restrictive receptors would receive even lower doses. Forward runs that consider peak dose based on the cumulative radionuclide inventory are described in Section 5.5.1, “Peak Dose from Cumulative Radionuclide Inventory.”
- The derived soil guidelines for uranium isotopes were derived independently from one another based on the results of dose only. The code used to accomplish the dose modeling does not consider enrichment.
- The derived soil guidelines reflect above background concentrations of radioactive material.

5.5 ADDITIONAL EVALUATIONS OF SOIL GUIDELINES

DOE-PPPO requested that ORISE perform a number of additional evaluations. Three evaluations were requested, one using the cumulative radionuclide inventory using maximum concentration values, one to determine sensitive parameters, and one to evaluate the uncertainty in the dose resulting from the derived soil guidelines.

5.5.1 PEAK DOSE FROM CUMULATIVE RADIONUCLIDE INVENTORY

The evaluation involved the assessment of potential peak dose from the cumulative radionuclide inventory using maximum concentration values based on a target dose constraint of 25 mrem/yr. No consideration was given to satisfying the unity rule, and the code was run for each receptor using the derived soil guidelines as the input nuclide concentration. That is, for this evaluation, only the four radionuclides for which soil guidelines are derived were used. These radionuclides and their soil guidelines are listed in Table 5-6. The following output peak doses in Table 5-7 were generated by the code:

Table 5–7. Peak Dose from Cumulative Radionuclide Inventory (mrem/yr)

Receptor	Resident Farmer	Recreational User	Wildlife Worker
Peak Dose (mrem/yr)	99	6	12
Time (yr)	0	0	0

The peak dose was evaluated between 0 and 1,000 years. The results demonstrate that for the current and future use scenarios modeled, the selected soil guidelines would meet the 100 mrem/yr public dose limit for all receptors—even if DOE-PPPO or their contractor(s) failed to utilize the unity rule.

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Graphics showing the doses by component (exposure) pathways for each receptor are provided in Figures 5-1 through 5-3. The peak dose for each receptor is the sum of the dose from each exposure pathway. For all receptors, the dose is highest at 0 years and is primarily received via the external gamma pathway. Soil ingestion results in approximately an order of magnitude less dose for each receptor. Because the Resident Farmer consumes milk, meat, and plants obtained from the site, these ingestion pathways contribute to this receptor’s peak dose (in descending order of contribution). The milk ingestion pathway contributes approximately 26% of the Resident Farmer’s total peak dose.

RESIDENT FARMER

DOSE: All Nuclides Summed, Component Pathways

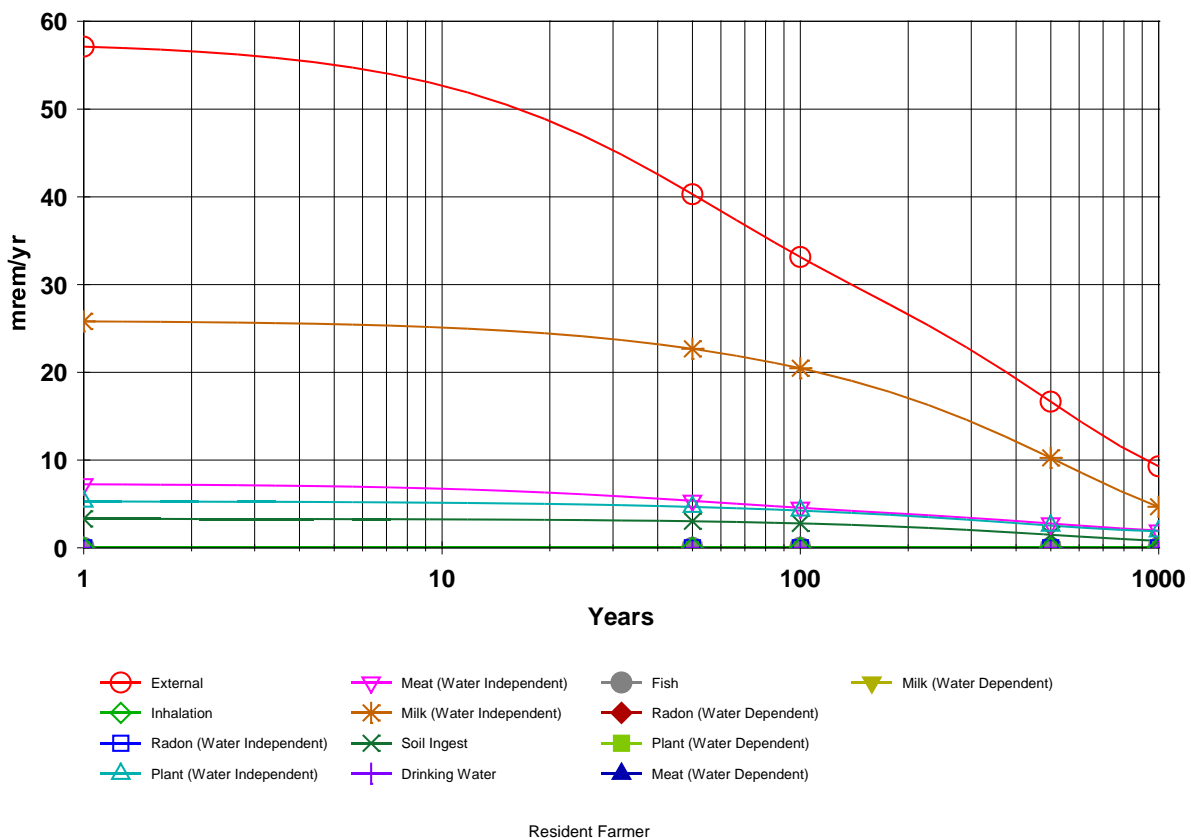


Figure 5-1. Dose from All Radionuclides by Pathway for the Resident Farmer

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RECREATIONAL USER

DOSE: All Nuclides Summed, Component Pathways

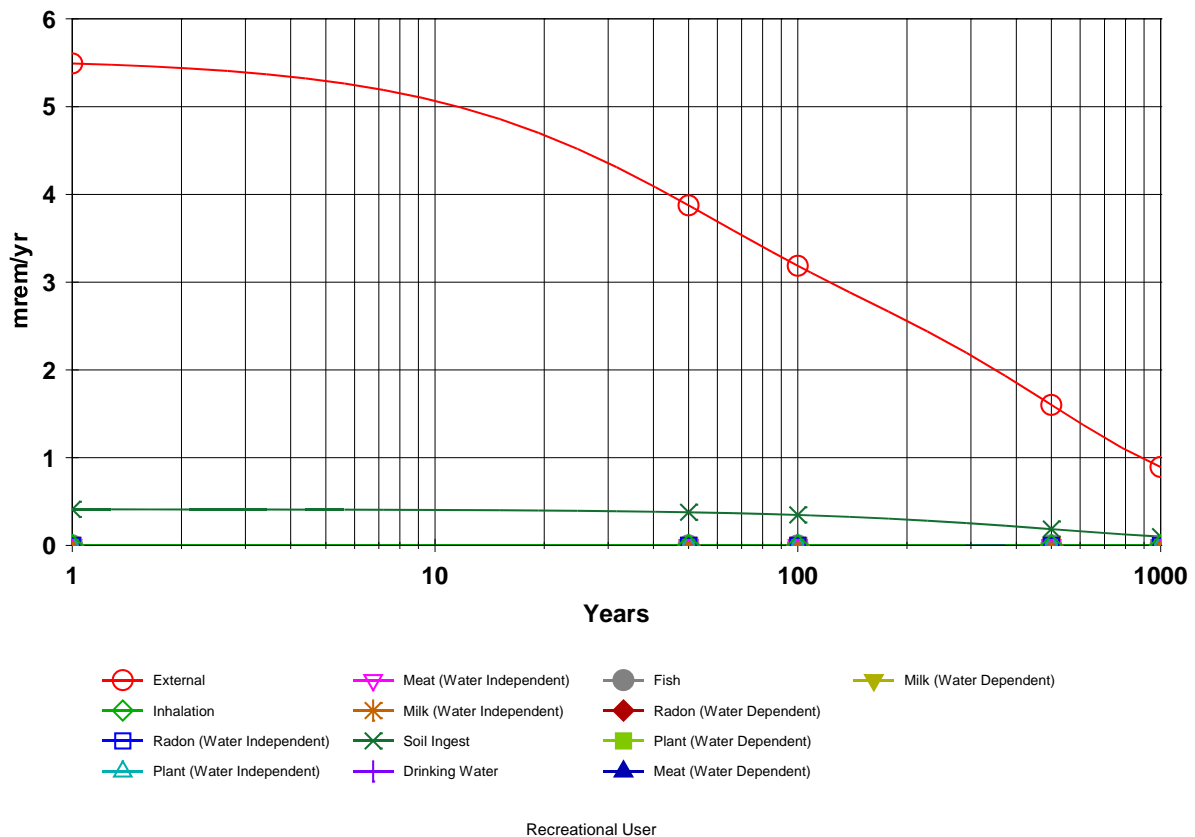


Figure 5-2. Dose from All Radionuclides by Pathway for the Recreational User

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WILDLIFE WORKER

DOSE: All Nuclides Summed, Component Pathways

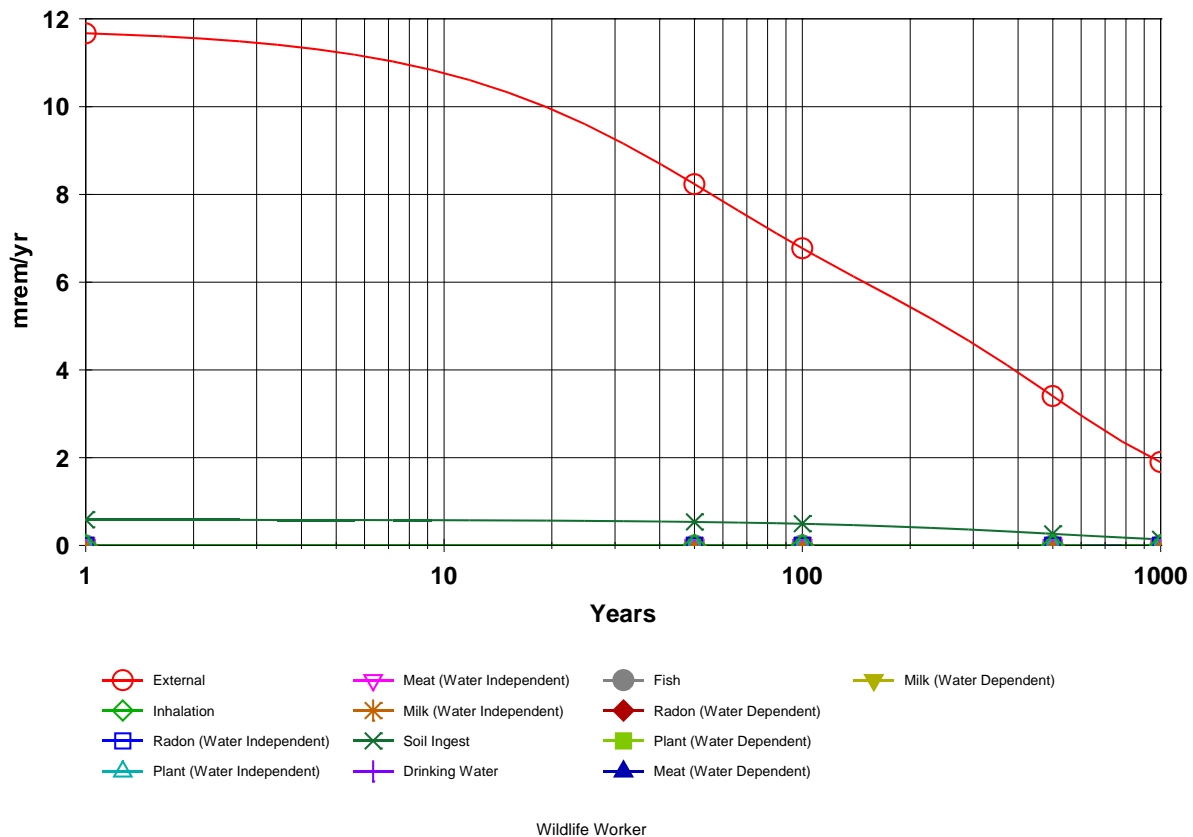


Figure 5-3. Dose from All Radionuclides by Pathway for the Wildlife Worker

5.5.2 SENSITIVITY ANALYSIS

The primary rationale behind sensitivity analyses (and probabilistic approaches) is that key parameters may require additional investigation, particularly when default parameters are used. Section 4.0, “Basis for the Derivation of Soil Guidelines,” contains a detailed discussion of sensitivity analysis and the parameters evaluated. In general, parameters that impacted external gamma exposure were most sensitive. Particularly sensitive parameters for the most restrictive receptor, the Resident Farmer, included: area of the contaminated zone and thickness of the contaminated zone. In contrast to the Resident Farmer, sensitivity analysis for the Recreational User and the Wildlife Worker indicated that these two receptors were most sensitive to the thickness of the contaminated area and not sensitive to the area of the contaminated zone. This is due to the fact

5.0: Results and Discussion

that the pathways which cause the area of the contaminated zone to be sensitive (i.e., meat and milk ingestion) are suppressed for these receptors.

Conversely, hydrologic parameters that impacted groundwater transport had a negligible impact on the results. The number of unsaturated zones and their density, depth, hydraulic conductivity, field capacity, etc. was varied and the code was run. The Dose to Source Ratios remained unchanged to four significant figures during each and every run.

5.5.2.1 *Size of the Contaminated Area*

Sensitivity Analysis (SA) was conducted on the size of the contaminated area (equivalent in RESRAD to the area of the contaminated zone) using the following parameters from Section 4.8, “Sensitivity Analysis”:

- Lower value: 10,000 m²
- Mid value: 20,000 m² (value used as deterministic input)
- Upper value: 40,000 m²

The results are depicted graphically in Figure 5-4 for the Resident Farmer when the derived soil guidelines are used as inputs and show that the dose increases when increasing the size of the area from 10,000 m² to 20,000 m². However, the dose remains unchanged when increasing the size of the area from 20,000 m² to 40,000 m².

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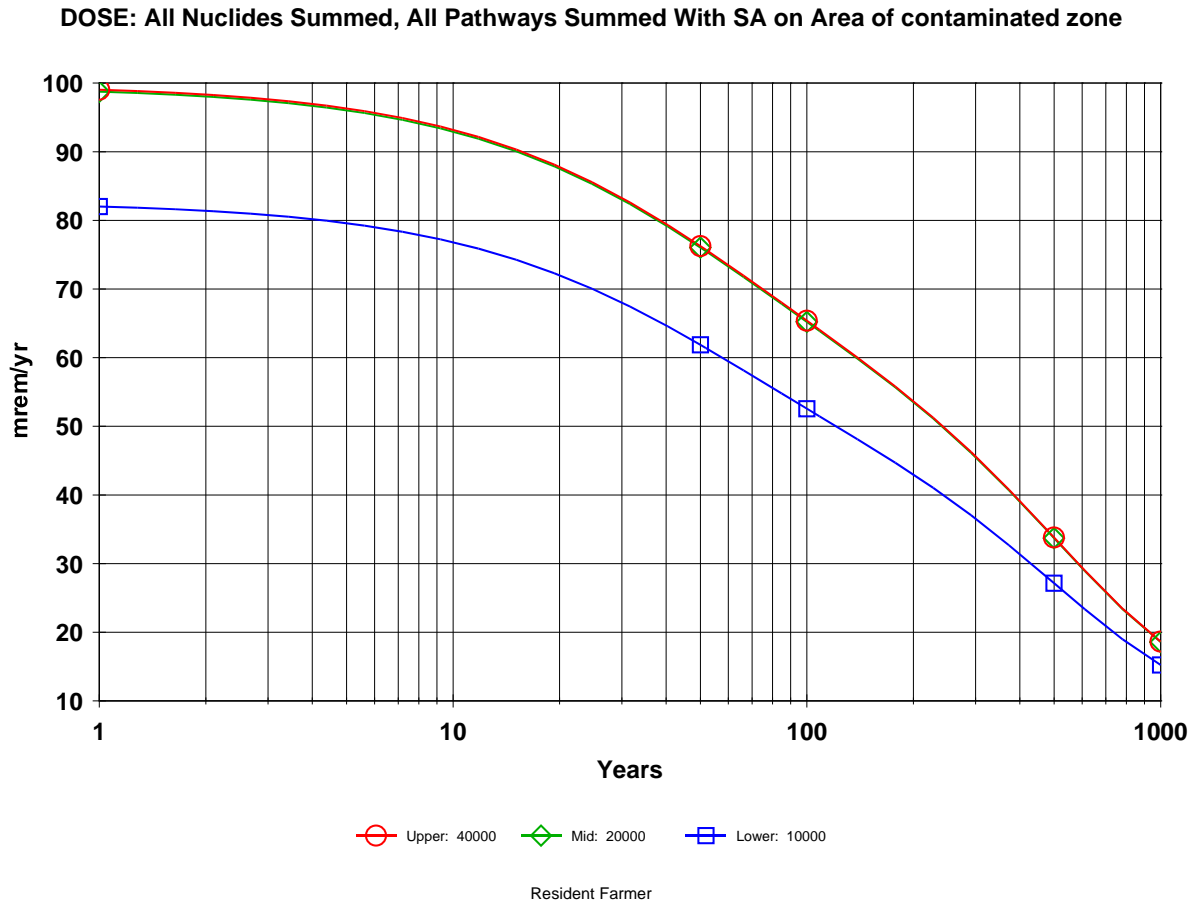


Figure 5-4. Sensitivity Analysis on the Area of the Contaminated Zone for the Resident Farmer

5.5.2.2 Thickness of the Contaminated Zone

SA was conducted on the thickness of the contaminated zone using the following parameters from Section 4.8, “Sensitivity Analysis”:

- Lower value: 0.03 m
- Mid value: 0.15 m (value used as deterministic input)
- Upper value: 0.75 m

The results are depicted graphically in Figure 5-5 for the Resident Farmer when the derived soil guidelines are used as inputs, and show that the dose decreases as the thickness of the contaminated zone decreases.

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DOSE: All Nuclides Summed, All Pathways Summed With SA on Thickness of contaminated zone

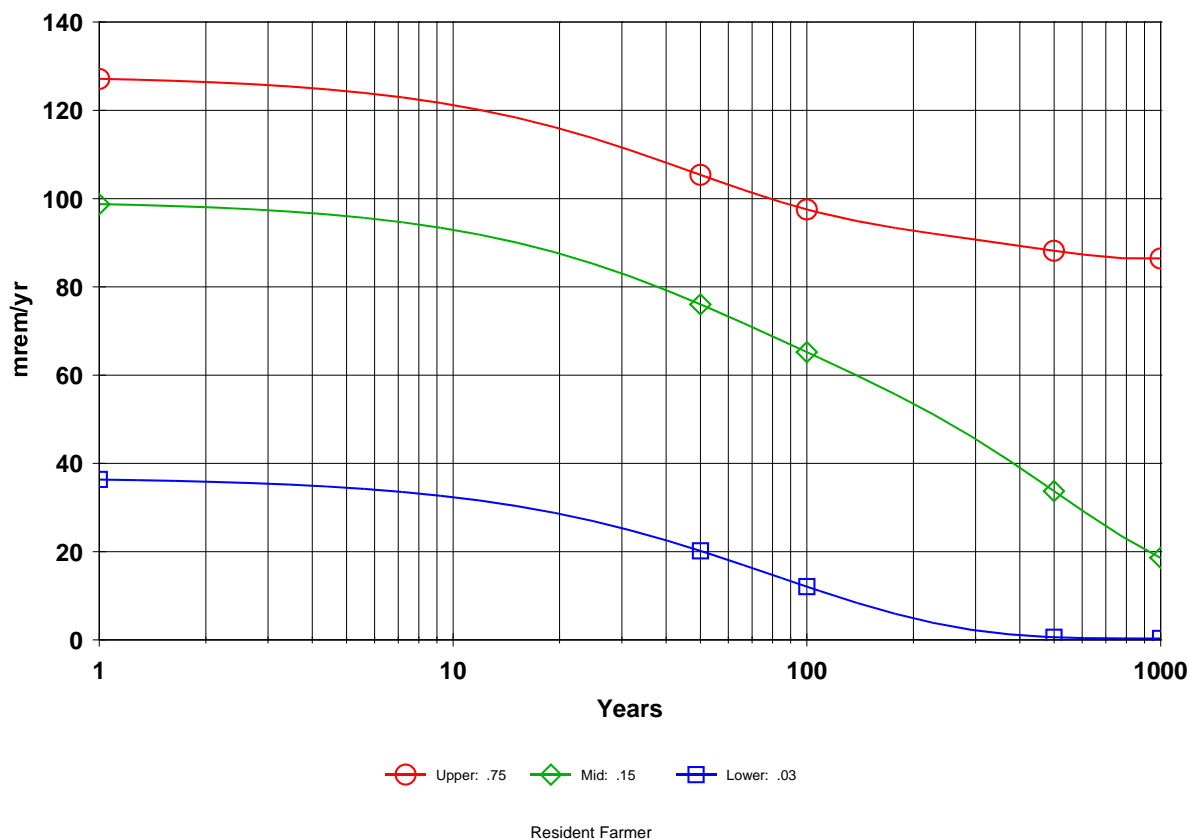


Figure 5-5. Sensitivity Analysis on the Thickness of the Contaminated Zone for the Resident Farmer

5.5.3 UNCERTAINTY (PROBABILISTIC) ANALYSIS

Results of the sensitivity analyses were used to determine the parameters evaluated through a probabilistic, or uncertainty, analysis. The conduct of an uncertainty analysis is relatively new in radiation dose modeling. The majority of dose modeling efforts rely on deterministic (defined single output) studies. In contrast, probabilistic analyses are “uncertain” because a statistical distribution is employed where a range of outcomes is possible each time the analysis is conducted.

As discussed in Section 4.0, “Basis for the Derivation of Soil Guidelines,” area of the contaminated zone and thickness of the contaminated zone were selected for the probabilistic analysis, along with a uniform distribution for each parameter.

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During the deterministic analysis, the code generated the most restrictive soil guidelines for the Resident Farmer. Sensitivity analysis for all the receptors indicated that the most sensitive parameter (i.e., thickness of the contaminated zone) was the same across all receptors. As a result, it was only necessary to perform an uncertainty analysis for the Resident Farmer.

In its output files, the code provides a cumulative probability distribution. This distribution can be used to compare dose output results against the percent dose. There are no specific references cited in the literature that identify what an appropriate percentile is or should be; however, commonly cited values include the 75th, 90th, and 95th percentiles. ORISE selected the 95th percentile for evaluation purposes. Table 5-8 includes these commonly cited percentiles and other percentiles for informational purposes.

Table 5–8. Cumulative Probability Summary for Total Dose Over Pathways

Cumulative Probability	Dose (t) in mrem/yr					
	t= 0 years	t= 1 year	t= 50 years	t= 100 years	t= 500 years	t= 1000 years
0.5	1.11E+02	1.10E+02	8.85E+01	8.00E+01	6.36E+01	5.44E+01
0.7	1.17E+02	1.16E+02	9.46E+01	8.64E+01	7.33E+01	6.69E+01
0.75	1.19E+02	1.18E+02	9.65E+01	8.87E+01	7.58E+01	7.11E+01
0.9	1.24E+02	1.23E+02	1.02E+02	9.37E+01	8.29E+01	7.92E+01
0.95	1.26E+02	1.25E+02	1.03E+02	9.55E+01	8.53E+01	8.26E+01

The doses across all the percentiles are higher at 0 years and decrease as time increases. The highest dose at the selected 95th percentile is 126 mrem/yr at 0 years. This is also depicted graphically in Figure 5-6.

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**Time vs. Dose using the 95-th Percentile Dose, Repetition=All
Repetitions**

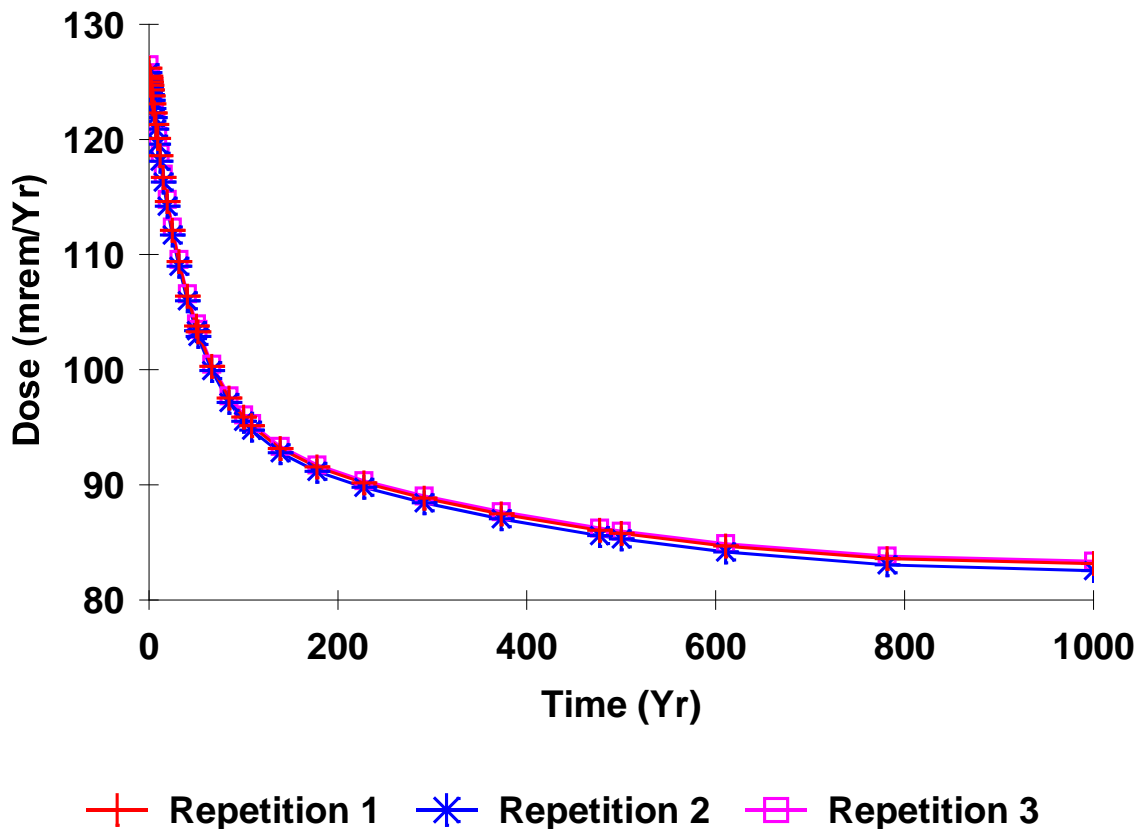


Figure 5-6. Probabilistic Analysis for the Resident Farmer at the 95th Percentile Dose

The data demonstrates that even if the assumptions of the model are inaccurate, and the thickness and size of the contaminated zone are instead a factor of 5 and 2 larger, respectively, the 95th percentile dose will drop below the 100 mrem/yr public dose limit in approximately 100 years.

In addition, it was determined that the thickness of the contaminated zone is the variable that contributes the most to the dose from the two variables evaluated in this probabilistic analysis.

In summary, by using the probabilistic analysis tool, the code calculated the total uncertainty induced in the output dose as a result of either the uncertainty or the probabilistic nature of these two input parameters (Yu et al. 2001). A RESRAD uncertainty report including more details on the probabilistic analysis is available in Appendix C.

6.0: Summary, Conclusions, and Application of ORISE-Derived Soil Guidelines

6.0: SUMMARY, CONCLUSIONS, AND APPLICATION OF ORISE-DERIVED SOIL GUIDELINES

ORISE was contracted by the DOE-PPPO to conduct dose modeling in support of a principal objective to derive soil guidelines for the “Property” at the PGDP. The soil guidelines are provided to DOE-PPPO for their consideration in support of the Authorized Limits request. A complete description of the methodology, including an assessment of the input parameters, model inputs, and results was provided in this report.

Per DOE Order 458.1, 4.k.(6) (DOE 2011), an AL represents a limit on the concentration or quantity of residual radioactive material on the surfaces or within property that has been derived consistent with DOE directives including the ALARA process requirements. An authorized limit may also include conditions or measures that limit or control the disposition of property. The DOE-PPPO administers oversight of the AL program.

The derivation of site-specific, deterministic soil guidelines for four targeted radionuclides of concern was assisted by reviewing site and other pertinent references, conducting an extensive environmental evaluation of the site (which identified multiple relevant site-specific environmental parameters for the computational model equations), developing a CSM and an extensive parameter table, executing the current version of the RESRAD computer code, and generating single radionuclide soil guidelines as code outputs. Input parameters were evaluated in terms of both sensitivity and uncertainty to examine their effect on the output results. The most limiting (restrictive) soil guidelines for a 25 mrem/yr dose constraint across all receptors were selected by ORISE and rounded to derived soil guidelines. Radioactive secular equilibrium was not assumed in the analysis due to the nature of the PGDP’s uranium enrichment mission.

The RESRAD code and project CSM were used to evaluate three plausible receptors relative to the targeted radionuclides and project dose constraints of 1, 15, and 25 mrem/yr, respectively. In addition, the results were evaluated against the 100 mrem/yr primary public dose limit above background, applicable to all sources and pathways, as cited in DOE Order 458.1.

The modeling runs used time horizons of 1,000 years—a time frame typically associated with soil guideline derivation. The external gamma pathway was identified as the important exposure pathway for all receptors. Sensitivity and uncertainty analyses were performed and these indicated that dose is significantly impacted by the thickness of the contaminated zone and, to some extent, its size (area).

An evaluation was also conducted at the request of the DOE-PPPO to determine the dose each receptor would receive if the unity rule was not observed. These evaluations used the derived soil guidelines as inputs to the modeling codes. Using a time horizon of 1,000 yr, the highest dose across

6.0: Summary, Conclusions, and Application of ORISE-Derived Soil Guidelines

all receptors was 99 mrem/yr. This dose was received by the Resident Farmer at time “0” yr. Doses to the remaining receptors were considerably lower (12 mrem/yr for the Wildlife Worker and 6 mrem/yr for the Recreational User).

Once soil guidelines are derived, several possible applications exist. These include whether radioactivity is present at either residual levels or levels considered “unacceptable” to meet property transfer goals; surveying and sampling considerations such as determining an appropriate level of project certainty associated with characterizing an area to ensure that radioactivity above established field scanning and laboratory equipment background levels is at or below DOE-approved ALs; and considerations such as establishing an independent verification program to ensure characterization results by a selected DOE contractor meets DOE programmatic requirements.

DOE is responsible for developing and approving the AL request and for implementing the requested ALs. The derived soil guidelines can be used by DOE to support the establishment of ALs.

The following sections provide additional technical information related to the results included in this report.

6.1 UNITY CALCULATIONS

Each of the radionuclide-specific soil guidelines corresponds to a concentration that meets a target dose constraint of 25 mrem/yr. Consequently, a unity calculation is required if it is desired to demonstrate compliance against the 25 mrem/yr constraint. The unity rule, represented in the expression below, is satisfied when radionuclide mixtures yield a combined fractional concentration limit that is less than or equal to one. The general form of the unity calculation is:

$$\frac{C_1}{SG_1} + \frac{C_2}{SG_2} + \dots + \frac{C_n}{SG_n} \leq 1 \text{ (unity)}$$

where C_i is the concentration of an individual nuclide in pCi/g and SG is that nuclide’s soil guideline.

6.2 RELATIONSHIP TO PRIMARY DOSE LIMIT AND BACKGROUND RADIATION SOURCES

The derived soil guidelines selected in this report are based on a 25 mrem/yr dose constraint, and they represent a dose that is a quarter of the primary public dose limit cited in DOE Order 458.1 (100 mrem/yr). In accordance with DOE Order 458.1 Paragraph 4.b.(1)(a)2 and 3, the public dose limit excludes doses from background radiation; doses received by patients from medical sources of

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radiation, and by volunteers in medical research programs; and doses from occupational exposure under an NRC or Agreement State license or to general employees regulated under 10 CFR 835. DOE Order 458.1 defines background radiation as: “Radiation from: (1) naturally occurring radioactive materials which have not been technologically enhanced (i.e., background radiation does not include TENORM); (2) cosmic sources; (3) global fallout as it exists in the environment (such as from the testing of nuclear explosive devices); (4) radon and its decay products in concentrations or levels existing in buildings or the environment which have not been elevated as a result of current or prior activities; and (5) consumer products containing nominal amounts of radioactive material or producing nominal amounts of radiation.”

Naturally occurring and other background sources of radiation exposure in the United States (U.S.) contribute to an average annual radiation exposure of 620 mrem as cited in National Council on Radiation Protection and Measurements (NCRP) Report No. 160, *Ionizing Radiation Exposure of the Population of the United States*.

Natural background sources of radiation, per the NCRP, include external exposure from space radiation (solar particles and cosmic rays), external exposure from terrestrial radiation (primarily K-40 and the U-238 and Th-232 decay series), internal exposure from inhalation of radon and thoron and their progeny, and internal exposure from radionuclides in the body.

Other sources cited in NCRP 160—not categorized as natural background sources—include exposures arising from consumer products and activities, industrial and research uses, and occupational tasks. In the U.S. these represent minor contributors to the dose received. Exposures from medical imaging procedures have increased significantly since the last NCRP report was issued on this topic and currently constitute nearly half of the total radiation exposure of the U.S. population from all sources.

6.3 HOT SPOT EVALUATIONS

Hot spots may be present in the modeled DOE “Property.” Using the MARSSIM terminology, a “hot spot” is equivalent to an “area of elevated activity.” It is defined in the MARSSIM as “an area over which residual radioactivity exceeds a specified value $DCGL_{EMC}$ ”, where $DCGL_{EMC}$ is a “derived concentration guideline level–elevated measurement comparison.” Hot spots are typically considered to be small, discrete areas.

The approach in MARSSIM uses an area factor to account for the difference between the size of the area upon which cleanup criteria (in this instance, soil guidelines) were derived and the size of the observed contaminated area, and the resulting change in dose. The area factor is the magnitude by which the concentration within the small area of a hot spot can exceed the soil guideline while

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continuing to meet the target dose constraint. The use of area factors, as described in MARSSIM, is the conventional means by which hot spots are evaluated for compliance.

An extended analysis is required to adequately address hot spots using area factors. This activity would primarily involve varying the size of the contaminated area and running the RESRAD code multiple times for the Resident Farmer. Per agreement with the DOE-PPPO, an extended analysis was not conducted.

Alternatively, the size and radioactivity level identified during field remedial activities may permit a technical judgment for these areas to remain in place. Recent studies demonstrate that hot spot doses are much smaller under likely field conditions than assessed under MARSSIM. This is particularly true when the receptor is located other than directly over the hot spot (Abelquist 2008). The external radiation pathway is particularly sensitive to changes in the areal size of the contaminated area (Abelquist 2008), and this pathway contributes most of the dose that drives the soil guidelines in this report.

This approach would also require an extended analysis. In this instance, further modeling would be necessary that considered the probability that a receptor spends an appreciable amount of time directly over the source. As indicated previously, DOE-PPPO did not task ORISE to perform an extended analysis.

Additional information related to hot spot analyses may be found in Abelquist 2001, and DOE G 441.1 XX (DOE 2002).

6.4 REMEDIAL STRATEGY

Since the beginning of uranium enrichment production in 1952, PGDP site operations have resulted in releases of radioactive and chemical constituents to environmental media. Environmental remediation activities at PGDP have been an ongoing initiative for several years and are being conducted in accordance with State and Federal regulations and DOE directives under a Federal Facilities Agreement. DOE utilizes a strategic plan to define remediation priorities and coordinate cleanup requirements under the RCRA and CERCLA. To date, remediation activities at the “Property” have included excavation of contaminated materials—e.g., in designated soil piles and rubble areas (DOE 2008a, DOE 2009c, DOE 2010a and DOE 2010b).

Although the ORISE-derived soil guidelines are based on a target dose constraint of 25 mrem/yr, the ORISE dose modeling evaluation resulted in single radionuclide soil guidelines for a variety of doses, including the 1 mrem/year “walk away” dose constraint.

6.0: Summary, Conclusions, and Application of ORISE-Derived Soil Guidelines

While surveying to satisfy a 1 mrem/yr dose constraint may be difficult to achieve based on scan MDC evaluations, it is reasonable to infer based on information and assumptions made in this report (NRC 1998) that detection sensitivities below the 25 mrem/yr based derived soil guidelines will be attainable. DOE, utilizing the ALARA philosophy and a cost-benefit analysis, may choose to remediate designated discrete soil piles and rubble areas to below the soil guidelines to reduce exposures to the general public accessing the “Property” for primarily recreational purposes.

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7.0: References

7.0: REFERENCES

The ORISE *Dose Modeling Evaluations and Technical Support Document for the Authorized Limits Request for the DOE-Owned Property Outside the Limited Area* was supported by many regulatory, guidance, site-specific, and additional background documents. A listing of pertinent documents reviewed for this project is provided in this section.

REGULATORY AND GUIDANCE-BASED

- 10 CFR 20, *Standards for Protection Against Radiation*. Code of Federal Regulations (CFR), Title 10, Energy, Part 20, Subpart E, “Radiological Criteria for License Termination” (current version), U.S. Nuclear Regulatory Commission, Washington, DC.
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*Appendix A: RESRAD Table of Input Parameters for the DOE-Owned Property
Outside the Limited Area Receptor Scenarios*

*APPENDIX A: RESRAD TABLE OF INPUT PARAMETERS FOR THE DOE-OWNED
PROPERTY OUTSIDE THE LIMITED AREA RECEPTOR SCENARIOS*

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RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
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Source

Radionuclide concentration	pCi/g	100 (Nuclide specific)	Site specific	All	Unit concentration for: Am-241 Cs-137 Np-237 Pu-238 Pu-239 Pu-240 Tc-99 Th-228 Th-230 Th-232 U-234 U-235 U-238	P	2	The radionuclide concentration used is 1 pCi/g for each parent radionuclide listed. The list of radionuclides used was provided to ORISE by DOE. It is assumed the parent radionuclides are not in equilibrium with their radioactive progeny.	DOE Project Communication (July 2010)
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Transport Factors

Distribution coefficients: contaminated zone	cm ³ /g	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (See Attachment I)	P	1	Tables with site-specific distribution coefficients for the parent and progeny radionuclides are available in Attachment I immediately following this table of parameters.	DOE 2003 Table Att. 1, page C3-314, Table C.3.1., page C3-301 DOE Project Communication (March 2010)
Distribution coefficients: unsaturated zones	cm ³ /g	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (See Attachment I)	P	1	Tables with site-specific distribution coefficients for the parent and progeny radionuclides are available in Attachment I immediately following this table of parameters.	DOE 2003 Table Att. 1, page C3-314, Table C.3.1., page C3-301 DOE Project Communication (March 2010)
Distribution coefficients: saturated zones	cm ³ /g	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (See Attachment I)	P	1	Tables with site-specific distribution coefficients for the parent and daughter radionuclides are available in	DOE 2003 Table Att. 1, page C3-314, Table C.3.1., page C3-

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
		available)						Attachment I immediately following this table of parameters.	301, Table 4.7., page 4-21 DOE Project Communication (March 2010)
Number of unsaturated zones	- ^e	1	0-5 (integer value)	All	1	P	3	The default number of unsaturated zones is used. The unsaturated zone considered is the Upper Continental Recharge System (UCRS).	DOE 2009 Appendix E, page E-243
Time since placement of material	yr	0	0 – 100	All	0	P	3	The default value is used.	Yu et al. 2001
Groundwater concentration	pCi/L	0 ^f (Nuclide specific)	0 – 1E+34	All	0	P	3	The default value is used.	Yu et al. 2001
Leach rate ^g	1/yr	0 (Nuclide specific)	0 – 1E+34	All	0	P	3	The default value is used.	Yu et al. 2001
Solubility limit	mol/L	0 (Nuclide specific)	0 – 1E+34	All	0	P	3	The default value is used.	Yu et al. 2001
Use plant/soil ratio	checkbox	Yes/No	NA ^h	All	Box checked for all except Np-237	NA	3	The default value is “checked”, but the code will not allow input of site specific distribution coefficients for Np-237 unless the box is unchecked. Confirmed that this approach was appropriate with Dr. Charley Yu, ANL	Project Communication with Dr. Charley Yu (April 2010)

Calculation Parameters

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
Basic radiation dose limit	mrem/yr	25	1E-2 – 1E+4	All	1, 15, 25, and 100	NA	3	Three target dose constraints of 1, 15, 25 mrem/yr and a primary dose limit of 100 mrem/yr are considered in this project. Note that changing the basic radiation dose limit in the code will not change the Dose to Source Ratio (DSR) which is used in the calculation for single radionuclide soil guidelines.	DOE SOW to ORISE for DOE Property Outside the Limited Areas, Section 2, Item 2
Times for calculations	yr	1, 3, 10, 30, 100, 300, 1000	0 – 1E+5	All	1,50, 100, 500, 1,000	P	3	A time horizon of 1,000 years is used in order to calculate single radionuclide soil guidelines.	DOE/CH/8901 DOE Order 5400.5 DOE Project Communication (July 2010)

Contaminated Zone Parameters

Area of contaminated zone	m ²	10,000	1E-4 – 1E+15	All	20,000	P	2	The primary source of contamination is assumed to be the DOE-Owned Property Outside the Limited Area (Property). It is assumed that contamination is spread across this entire Property by surface deposition. The area of 20,000 m ² (2 hectares or 5 acres) is selected since this the minimum size area required in order to have farm as per DOE CH-8901.	DOE/CH/8901
Thickness of contaminated zone	m	2	1E-5 – 1E+3	All	0.15	P	2	The contaminated zone/Property is assumed to be the first 6 inches of the Upper Continental Recharge System or UCRS (assuming the first layer of soil is from the UCRS and that it	DOE Project Communication with DOE-PPPO (July 2010)

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								is the same type of soil across this entire area). This value was provided by DOE, with the assumption the first six inches are contaminated due to surface deposition.	
Length parallel to aquifer flow	m	100	1E-4 – 1E+6	All	141.42	P	2	This is the square root of the area of the contaminated zone.	Yu et al. 2001

Cover and Contaminated Zone Hydrological Data

Cover depth	m	0	0 – 100	All	0	P	2	The default value is used.	Yu et al. 2001
Density of cover material	g/cm3	1.5	1E-3 – 22.5	All	1.5	P	1	The value is not used by the code since the cover depth is zero.	Yu et al. 2001
Cover erosion rate	m/yr	0.001	0 – 5	All	0.001	P, B	2	This value is not used by the code since the cover depth is zero.	Yu et al. 2001
Density of contaminated zone	g/cm3	1.5	1E-3 – 22.5	All	1.46	P	1	This value corresponds to the bulk density of the Upper Continental Recharge System (UCRS).	DOE 2009 Appendix E, page E-243
Contaminated zone total porosity	–	0.4	1E-5 – 1	All	0.45	P	2	The porosity of the UCRS is 0.45.	DOE 2009 Appendix E, page E-243
Contaminated zone field capacity	–	0.2	1E-34 – 1	All	0.25	P	3	This value was provided by DOE support geologist.	DOE Project Communication (July 2009)
Contaminated zone erosion rate	m/yr	0.001	0 – 5	All	0	P, B	2	DOE-PPPO recommended that erosion is not considered with the contaminated zone.	DOE Project Communication with DOE-PPPO (July 2010)
Contaminated zone hydraulic conductivity	m/yr	10	1E-3 – 1E+10	All	5.17	P	2	The site-specific hydraulic conductivity corresponds to the likeliest (mean) value of 1.64E-05 cm/sec for the UCRS (5.17 m/yr).	DOE 2009 Appendix E, Page E-244
Contaminated zone b parameter	–	5.3	0 – 15	All	5.3	P	2	The default value is used.	Yu et al. 2001
Evapotranspiration coefficient	–	0.5	0 – 0.999	All	0.97	P	2	The value was calculated using information from the Kentucky Climate Center provided by DOE	DOE Project Communication with DOE

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								consultant. The equation used to calculate these values is available in Yu et al. 1993. The calculations are available in Attachment II following this table.	consultant (December 2010) Yu et al. 1993 page 78
Wind speed	m/s	2	1E-4 – 20	All	4.5	P	2	The average prevailing wind is from the south to southwest at approximately 10 mph (4.5 meter/sec).	PRS 2008a page 1-4
Precipitation rate	m/yr	1	0 – 10	All	1.24	P	2	The yearly precipitation averages about 49 inches (1.24 meters).	PRS 2008a page 1-4
Irrigation rate	m/yr	0.2	0 – 10	All	0	B	3	The irrigation rate was set to 0 m/yr since irrigation in the Paducah, KY area is highly unlikely. In the event irrigation is needed in this region for farming or gardening, uncontaminated surface water will be the primary source and not groundwater.	DOE Project Communication with DOE-PPPO (September 2010) Kenny et al. 2009
Irrigation mode	–	Overhead	Overhead/ditch	All	Overhead	B	3	The default input is used.	Yu et al. 2001
Runoff coefficient	–	0.2	0 – 1	All	0.31		2	The value was calculated using information from PRS-2008b provided by DOE consultant. The equation used to calculate these values is available in Yu et al. 1993. The calculations are available in Attachment II following this table.	DOE Project Communication with DOE consultant (December 2010) PRS 2008b Table 4.10, page 4-26 Yu et al. 1993 page 73
Watershed area for nearby stream or pond	m ²	1,000,000	1E-4 – 1E+34	All	1,000,000		3	This parameter refers to the site-specific area that drains into the nearby pond. The default value is assumed.	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
Accuracy for water soil computation	–	0.001	0 – 0.1	All	0.001	NA	3	This parameter refers to the fractional accuracy desired (convergence criterion) in the Romberg integration used to obtain water/soil concentration ratios. The default value is assumed.	Yu et al. 2001

Saturated Zone Hydrological Data

Density of saturated zone	g/cm ³	1.5	1E-3 – 22.5	All	1.67	P	1	The saturated zone is the Regional Gravel Aquifer (RGA). The bulk density of the RGA is 1,670 kg/m ³ .	DOE 2009 Appendix E, page E-246
Saturated zone total porosity	–	0.4	1E-5 – 1	All	0.34	P	1	This value was obtained from DOE 2003.	DOE 2003 Table Att.4., page C3-315
Saturated zone effective porosity	–	0.2	1E-34 – 1	All	0.3	P	1	This value was obtained from DOE 2003.	DOE 2003 Table 4.7, page 4-21, Table Att.4., page C3-315
Saturated zone field capacity	–	0.2	1E-34 – 1	All	0.04	P	3	This value was obtained from DOE 2003.	DOE 2003 Table Att.4., page C3-315
Saturated zone hydraulic conductivity	m/yr	100	1E-3 – 1E+10	All	38938	P	1	The value of 350 ft/day is recommended in DOE 2009.	DOE 2009 Appendix E, page E-247
Saturated zone hydraulic gradient	–	0.02	1E-10 – 10	All	0.00101	P	2	This is the likeliest value obtained from DOE 2009.	DOE 2009 Appendix E, Table F.2.8, page E-263
Saturated zone b parameter	–	5.3	1E-34 – 15	All	4.05	P	2	DOE geologist determined that saturated zone consists of a mixture of gravel and sand and recommended a value from Yu et al. 1993 based on sand.	Yu et al. 1993 DOE Project Communication with geologist (April 2010)
Water table drop rate	m/yr	0.001	0 – 5	All	0.001	P	3	The default value is used. No site-specific value was available.	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
Well pump intake depth (below water table)	m	10	1E-5 – 1,000	All	10	P	2	The default value is used.	Yu et al. 2001
Model: nondispersion (ND) or mass-balance (MB)	–	ND	ND/MB	All	ND	P	3	The default model is used.	Yu et al. 2001
Well pumping rate	m ³ /yr	250	0 – 1E+10	All	250	B, P	2	The default value is assumed for the Resident Farmer, since it is reflected in the pathways for this receptor and site specific information is not available. The meat, milk, plant and drinking water ingestion pathways are suppressed for the Worker and Recreational User since these pathways are not considered for these receptors.	Yu et al. 2001

Uncontaminated Unsaturated Zone Parameters

Unsaturated zone thickness	m	4	0 – 10,000	All	12.2	P	1	DOE-PPPO recommended a value of 40 ft as the thickness of the unsaturated zone.	DOE Project Communication with PPPO (August 2010)
Unsaturated zone density	g/cm ³	1.5	1E-3 – 22.5	All	1.46	P	2	This value corresponds to the bulk density of the Upper Continental Recharge System (UCRS).	DOE 2009 Appendix E, page E-243
Unsaturated zone total porosity	–	0.4	1E-5 – 1	All	0.45	P	2	The porosity of the UCRS is 0.45.	DOE 2009 Appendix E, page E-243
Unsaturated zone effective porosity	–	0.2	1E-34 – 1	All	0.2	P	2	The default value is used.	Yu et al. 2001
Unsaturated zone field capacity	–	0.2	1E-34 – 1	All	0.2	P	3	This value was confirmed to be appropriate by Al Laase, a Paducah site expert modeler.	DOE Project Communication with PPPO (December 2010) Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
Unsaturated zone, soil-specific b parameter	–	5.3	0 – 15	All	5.3	P	2	The default value is used.	Yu et al. 2001
Unsaturated zone hydraulic conductivity	m/yr	10	1E-3 – 1E+10	All	5.17	P	2	The site-specific hydraulic conductivity corresponds to the likeliest (mean) value of 1.64E-05 cm/sec for the UCRS (5.17 m/yr).	DOE 2009 Appendix E, Page E-244

Occupancy, Inhalation, and External Gamma Parameters

Inhalation rate	m ³ /yr	8,400	0 – 20,000	RF	7,297	M, B	3	<p>The inhalation rate for the Resident Farmer was converted from a value available in DOE 2009. For the conversion 365 d/yr was used because this is what RESRAD considers.</p> <p>DOE 2009 has an inhalation rate of 2.5m³/hr (21,900 m³/yr) for the Worker and the Recreational User. The maximum value allowed by RESRAD is 20,000 m³/yr, thus this value was used.</p> <p>See Attachment II following this table of parameters.</p>	<p>King et al. 2006 Page 178</p> <p>DOE 2009 Appendix D, Table D.7, page D-17, Table D.38, page D-48, Table D.17, page D-27</p>
				W RU	20,000				
Mass loading for inhalation	g/m ³	1.00E-04	0 – 2	RF RU	1.08E-06	P, B	2	<p>The following equation was used to calculate the Mass Loading for Inhalation or Air-to-Soil concentration ratio (ASR): ASR = 1/ PEF; PEF is the particulate emission factor.</p> <p>The PEF values used to calculate the mass loading for inhalation are available in DOE 2009. The PEF values were converted into RESRAD compatible units.</p> <p>See Attachment II following this table of parameters</p>	<p>King et al. 2006 Page 178</p> <p>DOE 2009 Appendix D, Table D.7, page D-17, Table D.38, page D-48, and Table D.17, page D-27</p>
				W	1.61E-06				

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
Exposure duration	yr	30	1 – 1,000	RF	24	B	3	The exposure duration is the span of time, in years, during which an individual is expected to spend time on the site. This value is used in calculating lifetime cancer risk from exposure to radionuclide contamination. It is also used to calculate time-integrated dose if the exposure duration is less than a year.	DOE 2009 Appendix D, Table D.8, page D-18, Table D.38, page D-41, and Table D.17, page D-27
				W	25			These values were obtained from DOE 2009. The exposure duration is available in the tables of Appendix D. For the Resident Farmer the adult value for "Rural Resident" is used.	
				RU	12			For the Worker the value for "Industrial Worker or Excavation Worker" is used since these values are equivalent. For the Recreational User the value for the "Recreational User (Teen)" is used. See Attachment II following this table of parameters.	
Indoor dust filtration factor	–	0.4	0 – 1	All	0.4	P, B	2	The default value is used. Indoor time fraction is the driver for application of this parameter. In instances where there is no indoor occupancy, this parameter will not be applied.	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
External gamma shielding factor	–	0.7	0 – 1	RF W	0.8	P	2	The external gamma shielding factors are available for the Resident Farmer, Worker, and Recreational User in DOE 2009. The value is 0.2 for all these receptors except for the Recreational User which is 0. The RESRAD input values correspond to 0.8 and 1. The shielding factor of 0.8 implies that the indoor levels of external radiation are 20% lower than the outdoor levels. A shielding factor of 1 implies that there is no shielding. See Attachment II following this table of parameters.	DOE 2009 Appendix D, Table D.8, page D-18, Table D.18, page D-28, and Table D.40, page D-50
				RU	1				
Indoor time fraction	–	0.5	0 – 1	RF	0.64	B	3	This parameter is the average fraction of time during which an individual stays indoors. The Resident Farmer is inside 16 hours per day, 350 days per year which results in an indoor fraction of 64%. The Worker and Recreational User will spend all of their time outdoors. See Attachment II following this table of parameters.	DOE 2009 Appendix D, Table D.8, page D-18
				W RU	0				
Outdoor time fraction	–	0.25	0 – 1	RF	0.32	B	3	This parameter is the average fraction of time during which an individual stays outdoors on the site. The Resident Farmer is outside 8 hours per day, 350 days per year which results in an outdoor fraction of 32%.	DOE 2009 Appendix D, Table D.8, page D-18, Table D.18, page D-28, and Table D.40, page D-50

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
				W	0.17			It is assumed the Worker is a Wildlife Worker, thus the outdoor time fraction for an outdoor worker (185 days/yr) from DOE 2009 is used. It is also assumed that this individual works outside 8 hrs/day, 185 days/yr.	
				RU	0.08			The Recreational User is considered to be a teenager who will spend 5 hrs/day, 140 days/yr on the contaminated site. See Attachment II following this table of parameters.	
Shape of the contaminated zone (shape factor flag)	–	Circular	Circular/non-circular	All	Circular	P	3	It is assumed that the receptor is located in the middle of the contaminated zone. Therefore, the circular shape was assumed instead of the noncircular shape. By default, the receptor is assumed to be placed in the middle of a circularly shaped contaminated zone.	Yu et al. 2001

Ingestion Pathway, Dietary Data

Fruit, vegetable, and grain consumption	kg/yr	160	0 – 1,000	All	231.7	M, B	2	The value was converted from Table D.9 in DOE 2009, which is for home grown vegetables. It does not specify fruit, and grain, thus for RESRAD a ratio was obtained to assign a value for fruit, vegetable and grain consumption and a value for leafy vegetable consumption. The calculation is included in Attachment II.	DOE 2009 Appendix D, Table D.9, page D-19
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RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								<p>This parameter applies to the Resident Farmer since the ingestion pathway for plants/home-grown produce is applicable for this receptor.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	
Leafy vegetable consumption	kg/yr	14	0 – 100	All	20.3	M, B	3	<p>The value was converted from Table D.9 in DOE 2009, which is for home grown vegetables. It does not specify fruit, and grain, thus for RESRAD a ratio was obtained to assign a value for fruit, vegetable and grain consumption and a value for leafy vegetable consumption.</p> <p>The calculation is included in Attachment II.</p> <p>This parameter applies to the Resident Farmer since the ingestion pathway for plants/home-grown produce is applicable for this receptor.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	DOE 2009 Appendix D, Table D.9, page D-19
Milk consumption	L/yr	92	0 – 1,000	All	425	M, B	2	<p>This value was converted from Table D.11 in DOE 2009. The density of whole milk, 1030 kg/cubic meter, was used to convert the value into L/yr.</p> <p>This parameter is applicable for the Resident Farmer.</p> <p>This parameter is not applicable</p>	DOE 2009 Appendix D, Table D.11, page D-21

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								for the Worker and Recreational User; therefore, the milk ingestion pathway is suppressed. See Attachment II following this table of parameters.	
Meat and poultry consumption	kg/yr	63	0 – 300	All	154	M, B	3	This value was converted from Table D.10, D.12, and D.13 in DOE 2009. The value is the sum of the values obtained for beef, pork and poultry, since they are in separate tables. The value for eggs is available, but eggs are not considered poultry. This parameter is applicable for the Resident Farmer. This parameter is not applicable for the Workers and Recreational User; therefore, the meat ingestion pathway is suppressed. See Attachment II following this table of parameters.	DOE 2009 Appendix D, Table D.10, D.12, and D.13, pages D-20, D-22, and D-23
Fish consumption	kg/yr	5.4	0 – 1,000	All	5.4	M, B	3	The aquatic foods ingestion pathway is suppressed in RESRAD for all receptors.	Yu et al. 2001
Other seafood consumption	kg/yr	0.9	0 – 100	All	0.9	M, B	3	The aquatic foods ingestion pathway is suppressed in RESRAD for all receptors.	Yu et al. 2001
Soil ingestion rate	g/yr	36.5	0 – 10,000	All	36.5	M, B	2	This value was converted from Table D.5 in DOE 2009. Reference DOE 2009 assumes a lower ingestion rate for an Industrial Worker. However, the Wildlife Worker tends to crops and is assumed to have a soil ingestion rate similar to the	DOE 2009 Appendix D, Table D.5, page D-15, and Table D.15, page D-25

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								Resident Farmer. For the Recreational User, the value available in Table D.15 in DOE 2009 is for ingestion of sediment. This value was assumed for the soil ingestion rate. See Attachment II following this table of parameters.	
Drinking water intake	L/yr	510	0 – 10,000	All	700	M, B	2	This value was converted from Table D.1 in DOE 2009; however, the drinking water pathway is suppressed for all receptors. See Attachment II following this table of parameters.	DOE 2009 Appendix D, Table D.1, page D-11
Drinking water contaminated fraction	–	1	0 – 1	All	1	B, P	3	This parameter allows specification of the fraction of contaminated intake for the drinking water pathway. The remaining balance (if value <1) of the drinking water is from off-site sources, which are assumed to be uncontaminated. The default value of 1 is assumed for the Resident Farmer. This parameter is not applicable for the Worker or the Recreational User; therefore, the drinking water ingestion pathway is suppressed.	Yu et al. 2001
Household water contaminated fraction	–	1	0 – 1	All	1	B, P	3	The default value of 1 is assumed. However, this parameter is related to the Radon pathway and this pathway is suppressed for all the	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								receptors.	
Livestock water contaminated fraction	–	1	0–1	All	1	B, P	3	The default value of 1 is assumed for the Resident Farmer. This default value of 1 indicates that all livestock water is from an on-site source. This parameter is not applicable for the Worker or the Recreational User; therefore, the meat and milk ingestion pathways are suppressed.	Yu et al. 2001
Irrigation water contaminated fraction	–	1	0–1	All	0	B, P	3	A value of “0” is used for the Resident Farmer since this receptor will use an off-site water source that is uncontaminated. This parameter is not applicable for the other receptors. The plant ingestion pathway is suppressed for the Worker, and the Recreational User.	DOE Project Communication with DOE-PPPO (September 2010) Kenny et al. 2009
Aquatic food contaminated fraction	–	0.5	0–1	All	0.5	B, P	2	A value of 0.5 indicates that 50% of aquatic food is being obtained from on-site sources. This parameter is suppressed by turning off the aquatic food pathway for all receptors.	Yu et al. 2001
Plant food contaminated fraction	–	-1	0 to 1 or -1	All	-1	B, P	3	The default value of -1 specifies that the contaminated fraction of plant food is calculated from the appropriate area factor in the code (see page A-8 of Yu et al. 2001). The plant ingestion pathway is suppressed for the Worker and Recreational User.	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
Meat contaminated fraction	–	-1	0 to 1 or –1	All	-1	B, P	3	A default value of -1 was assumed for the Resident Farmer. The default value of -1 specifies that the contaminated fraction of meat is calculated from the appropriate area factor in the code. The meat ingestion pathway is suppressed for the Worker and Recreational User.	Yu et al. 2001
Milk contaminated fraction	–	-1	0 to 1 or –1	All	-1	B, P	3	The default value of -1 specifies that the contaminated fraction of milk is calculated from the appropriate area factor in the code. The milk ingestion pathway is suppressed for the Worker and Recreational User.	Yu et al. 2001

Ingestion Pathway, Nondietary Data

Livestock fodder intake for meat	kg/d	68	0 – 300	All	25	M	3	This parameter is for the daily intake of fodder by livestock kept for meat consumption. The code uses the area factor to calculate the contaminated intake. The meat ingestion pathway is suppressed for the Worker and Recreational User.	DOE 2009 Appendix D, Table D.46, page D-56
Livestock fodder intake for milk	kg/d	55	0 – 300	All	25	M	3	This parameter is for the daily intake of fodder by livestock kept for milk consumption. The code uses the area factor to calculate the contaminated intake. The milk ingestion pathway is	DOE 2009 Appendix D, Table D.47, page D-57

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								suppressed for the Worker and Recreational User.	
Livestock water intake for meat	L/d	50	0 – 500	All	50	M	3	This parameter is for the daily intake of water by livestock kept for meat consumption. The code uses the area factor to calculate the contaminated intake. The meat ingestion pathway is suppressed for the Worker and Recreational User.	DOE 2009 Appendix D, Table D.46, page D-56
Livestock water intake for milk	L/d	160	0 – 500	All	160	M	3	The default value is used for the Resident Farmer. The milk ingestion pathway is suppressed for the Worker and Recreational User.	Yu et al. 2001
Livestock intake of soil	kg/d	0.5	0 – 10	All	1	M	3	This parameter reflects the daily intake of soil by livestock kept for meat or milk consumption. DOE 2009 has separate tables for livestock soil ingestion. A value of 1kg/d is listed for beef and dairy in each table, thus for the Resident Farmer, this value will be used. The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.	DOE 2009 Appendix D, Tables D.46 and D.47, pages D-56 and D-57
Mass loading for foliar deposition	g/m ³	1.00E-04	0 – 1	All	1.00E-04	P	3	The average mass loading of airborne contaminated soil particles in a garden during the growing season. The default value is assumed for the Resident Farmer since plant ingestion is a pathway for these receptors and site specific	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								information is not available. The plant, meat and milk ingestion pathways are suppressed for the Worker and Recreational User.	
Depth of soil mixing layer	m	0.15	0 – 1	All	0.15	P	2	Used in calculating the depth factor for dust inhalation and soil ingestion pathways and for foliar deposition for the plant, meat, and milk ingestion pathways. The depth factor is the fraction of the resuspendable soil particles at the ground surface that are contaminated. It is calculated by assuming that mixing of soil will occur in the soil mixing layer. The default value is assumed and is applied to all receptors since the inhalation and soil ingestion pathways apply to all receptors and site specific information is not available. The plant, meat, and milk ingestion pathways are suppressed for the Worker and Recreational User.	Yu et al. 2001
Depth of roots	m	0.9	0 – 100	All	0.9	P	1	The default value is assumed for the Resident Farmer since meat, milk, and plant ingestion are active pathways for this receptor and site specific information is not available. The plant, meat, and milk ingestion are suppressed for the Worker and Recreational User.	Yu et al. 2001
Groundwater	–	1	0 – 1	All	1	B, P	3	A value of 1 specifies 100%	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
fractional usage for drinking water								groundwater usage and 0 selects 100% surface water usage. The default value is used. The drinking water pathway is suppressed for the Worker and Recreational User.	
Groundwater fractional usage for household water	–	1	0–1	All	1	B, P	3	A value of 1 specifies 100% groundwater usage and 0 selects 100% surface water usage. The default value is used. The radon pathway is suppressed for all receptors since this pathway is not considered in the conceptual site model.	Yu et al. 2001
Groundwater fractional usage for livestock water	–	1	0–1	All	1	B, P	3	A value of 1 specifies 100% groundwater usage and 0 selects 100% surface water usage. The default value is used. The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.	Yu et al. 2001
Groundwater fractional usage for irrigation water	–	1	0–1	All	0	B, P	3	The four groundwater fractional usage parameters (drinking water, household water, livestock water, and irrigation water) are included primarily for all groundwater (well or spring) and surface water (pond or river) scenarios. Hence, the fractions will usually be set at 1 or 0. A value of 1 specifies 100% groundwater usage and 0 specifies 100% surface water usage. A value of 0 is used for the Resident Farmer, because the	Yu et al. 2001 DOE Project Communication with DOE-PPPO (September 2010) Kenny et al. 2009

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								<p>site conceptual model assumes this individual will obtain uncontaminated irrigation water from off site.</p> <p>The plant ingestion pathway is suppressed for the Worker, and Recreational User since this pathway is not considered in the conceptual site model for these receptors.</p>	

Plant Factors

Wet-weight crop yields for non-leafy vegetables	kg/m ²	0.7	0.01 – 3	All	0.7	P	2	<p>The weight of the edible portion of plant food produced per unit land area for different food classes. The code has wet-weight crop yield for non-leafy, leafy, and fodder. Non-leafy and leafy vegetables are for human consumption; fodder is for animal consumption.</p> <p>The default value is assumed for the Resident Farmer since the plant ingestion pathway is applicable and site specific information is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Wet-weight crop yields for leafy vegetables	kg/m ²	1.5	0.01 – 3	All	1.5	P	3	<p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and site specific information is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								Recreational User.	
Wet-weight crop yields for fodder	kg/m ²	1.1	0.01 – 3	All	1.1	P	3	The default value is used for the Resident Farmer since meat and milk ingestion is applicable and a site specific value is not available. The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.	Yu et al. 2001
Length of growing season for non-leafy vegetables	yr	0.17	0.01 – 1	All	0.17	P	3	The exposure time to contamination for the plant food during the growing season. The contamination can reach the edible portion of the plant food through foliar deposition, root uptake, and water irrigation. The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available. The plant ingestion pathway is suppressed for the Worker and Recreational User.	Yu et al. 2001
Length of growing season for leafy vegetables	yr	0.25	0.01 – 1	All	0.25	P	3	The exposure time to contamination for the plant food during the growing season. The contamination can reach the edible portion of the plant food through foliar deposition, root uptake, and water irrigation. The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available. The plant ingestion pathway is	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								suppressed for the Worker and Recreational User.	
Length of growing season for fodder	yr	0.08	0.01 – 1	All	0.08	P	3	<p>The exposure time to contamination for the plant food during the growing season. The contamination can reach the edible portion of the plant food through foliar deposition, root uptake, and water irrigation.</p> <p>The default value is assumed for the Resident Farmer because meat and milk ingestion pathways are applicable and a site specific value is not available.</p> <p>The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Translocation factor for non-leafy vegetables	–	0.1	0 – 1	All	0.1	P	3	<p>The fraction of the contamination that is retained on the foliage that is transferred to the edible portion of the plant.</p> <p>The default value is used for the Resident Farmer since plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Translocation factor for leafy vegetables	–	1	0 – 1	All	1	P	3	<p>The fraction of the contamination that is retained on the foliage that is transferred to the edible portion of the plant.</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								<p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	
Translocation factor for fodder	–	1	0 – 1	All	1	P	3	<p>The fraction of the contamination that is retained on the foliage that is transferred to the edible portion of the plant.</p> <p>The default value is used for the Resident Farmer because meat and milk ingestion pathways are applicable and a site specific value is not available.</p> <p>The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Weathering removal constant	1/yr	20	1 – 40	All	20	P	2	<p>The weathering process would remove contaminants from foliage of the plant food. The process is characterized by a removal constant and reduces the amount of contaminants on foliage exponentially during the exposure period.</p> <p>The default value is used for the Resident Farmer since plant, meat and milk ingestion pathways are applicable and a site specific value is not available.</p> <p>The plant, meat and milk ingestion pathways are suppressed for the Worker and</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								Recreational User.	
Wet foliar interception fraction for non-leafy vegetables	–	0.25	0 – 1	All	0.25	P	3	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant food. Both dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p> <p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Wet foliar interception fraction for leafy vegetables	–	0.25	0 – 1	All	0.25	P	2	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant food. Both dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p> <p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Wet foliar interception fraction for fodder	–	0.25	0 – 1	All	0.25	P	3	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant food. Both dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								<p>The default value is used for the Resident Farmer because meat and milk ingestion pathways are applicable and a site specific value is not available.</p> <p>The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	
Dry foliar interception fraction for non-leafy vegetables	–	0.25	0 – 1	All	0.25	P	3	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant food. Both the dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p> <p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Dry foliar interception fraction for leafy vegetables	–	0.25	0 – 1	All	0.25	P	3	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant food. Both the dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p> <p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
Dry foliar interception fraction for fodder	–	0.25	0 – 1	All	0.25	P	3	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant food. Both the dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p> <p>A default value is used for the Resident Farmer because meat and milk ingestion pathways are applicable and a site specific value is not available.</p> <p>The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	Yu et al. 2001

Storage Times before Use Data

Storage times for fruits, non-leafy vegetables, and grain	d	14	0 – 1E+34	All	14	B	3	<p>The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage.</p> <p>The default value is used for the Resident Farmer since plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Storage times for leafy vegetables	d	1	0 – 1E+34	All	1	B	3	<p>The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage.</p> <p>The default value is used for the Resident Farmer since plant</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								<p>ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	
Storage times for milk	d	1	0 – 1E+34	All	1	B	3	<p>The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage.</p> <p>The default value is used for the Resident Farmer since milk ingestion pathway is applicable and a site specific value is not available.</p> <p>The milk ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Storage times for meat	d	20	0 – 1E+34	All	20	B	3	<p>The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage.</p> <p>The default value is used for the Resident Farmer since meat ingestion is applicable and a site specific value is not available.</p> <p>The meat ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Storage times for fish	d	7	0 – 1E+34	All	7	B	3	<p>The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage.</p> <p>The default value is used; however, the aquatic foods ingestion pathway is suppressed</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								for all receptors since this pathway is not considered in the conceptual site model.	
Storage times for crustacea and mollusks	d	7	0 – 1E+34	All	7	B	3	The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage. The default value is used; however, the aquatic foods ingestion pathway is suppressed for all receptors since this pathway is not considered in the conceptual site model.	Yu et al. 2001
Storage times for well water	d	1	0 – 1E+34	All	1	B	3	The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage. The default value is used for the Resident Farmer since plant, meat, milk ingestion and drinking water pathways are applicable and a site specific value is not available. The plant, meat, milk ingestion and drinking water pathways are suppressed for the Worker and Recreational User since these pathways are not considered in the conceptual site model.	Yu et al. 2001
Storage times for surface water	d	1	0 – 1E+34	All	1	B	3	The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage. The default value is used for the Resident Farmer since plant, meat, milk ingestion and drinking water pathways are applicable and a site specific	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								value is not available. The plant, meat, milk ingestion and drinking water pathways are suppressed for the Worker and Recreational User since these pathways are not considered in the conceptual site model.	
Storage times for livestock fodder	d	45	0 – 1E+34	All	45	B	3	For livestock fodder the storage time is an annual average. The default value is obtained by assuming 6 months of outside gazing and 6 months of silage fodder with an average silo time of 3 months. The default value is used for the Resident Farmer because the meat and milk ingestion pathways are applicable and a site specific value is not available. The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.	Yu et al. 2001
Inhalation dose conversion factors	mrem/pCi	Nuclide Specific (Default values available)	Nuclide Specific	RF W	Nuclide Specific (ICRP-72 (Adult))	M	3	The ICRP -72 Adult and Age 15 libraries are selected to obtain results in Total Effective Dose (TED) in order to comply with changes made to 10 CFR 835 effective on July 9 th , 2010.	Yu et al. 2001
				RU	Nuclide Specific (ICRP-72 (Age 15))			The Recreational User is the only receptor who is a teenager; therefore, the applicable library is ICRP 72 (Age 15).	

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
Ingestion dose conversion factors	mrem/pCi	Nuclide Specific (Default values available)	Nuclide Specific	RF W	Nuclide Specific (ICRP-72 (Adult))	M	3	The ICRP -72 Adult and Age 15 libraries are selected to obtain results in Total Effective Dose (TED) in order to comply with changes made to 10 CFR 835 effective on July 9 th , 2010. The Recreational User is the only receptor who is a teenager; therefore, the applicable library is ICRP 72 (Age 15).	Yu et al. 2001
				RU	Nuclide Specific (ICRP-72 (Age 15))				
Slope factor-external	(risk/yr)/ (pCi/g)	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (Default values)	M	3	Nuclide specific default values are used.	Yu et al. 2001
Slope factor - inhalation	risk/pCi	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (Default values)	M	3	Nuclide specific default values are used.	Yu et al. 2001
Slope factor - ingestion	risk/pCi	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (Default values)	M	3	Nuclide specific default values are used.	Yu et al. 2001
Plant transfer factor	–	Element Specific (Default values available)	Element Specific	All	Nuclide Specific (Default values)	P	1	Nuclide specific default values are used.	Yu et al. 2001
Meat transfer factor	(pCi/kg)/ (pCi/d)	Element Specific (Default values available)	Element Specific	All	Nuclide Specific (Default values)	P	2	Nuclide specific default values are used.	Yu et al. 2001
Milk transfer factor	(pCi/L)/ (pCi/d)	Element Specific (Default values available)	Element Specific	All	Nuclide Specific (Default values)	P	2	Nuclide specific default values are used.	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
		available)							
Bioaccumulation factor for fish	(pCi/kg)/ (pCi/L)	Element Specific (Default values available)	Element Specific	All	Nuclide Specific (Default values)	P	2	Nuclide specific default values are used.	Yu et al. 2001
Bioaccumulation factor for crustacea and mollusks	(pCi/kg)/ (pCi/L)	Element Specific (Default values available)	Element Specific	All	Nuclide Specific (Default values)	P	3	Nuclide specific default values are used.	Yu et al. 2001

- a RESRAD does not provide code-accepted values for element- or nuclide-specific parameters.
- b The receptors considered for the selection of parameters are the Resident Farmer (RF), Wildlife Worker (W), and Recreational User (RU)
- c P = physical, B = behavioral, M = metabolic; when more than one type is listed, the first is primary and the next is secondary. The RESRAD parameters that are not classified, because of their function in the code are considered as "NA= not applicable" in this table.
- d According to NUREG/CR-6697, it is necessary to establish priorities about which parameters to collect data for and use for distribution analysis. The parameters were ranked into three levels of priority: 1 (high priority), 2 (medium priority), and 3 (low priority).
- e "-" indicates that the parameter is dimensionless.
- f Groundwater concentration can be input only if time since placement of material is >0.
- g This parameter should be used only if radionuclide leach rates are known.
- h NA = not applicable.

The Radon and Carbon-14 parameters are not included as part of this table because these radionuclides are not included in the contaminants of concern for this project. RESRAD allows the user to edit radon parameters only when a radon parent for either Rn-222 (U-238, U-234, Th-230, or Ra-226) or Rn-220 (Th-232, Ra-228, or Th-228) is present as a contaminant. Similarly, a user will have access to carbon-14 (C-14) parameters only if C-14 is a contaminant.

Notes:

The template for the table of parameters was created based on information available in NUREG/CR-6697 ANL/EAD/TM-98 "Development of Probabilistic RESRAD 6.0 and RESRAD-Build 3.0 Computer Codes" and the RESRAD 6.0 Manual.

Attachment I

Distribution Coefficients

Distribution Coefficients (Kds, cm³/g) ^{a,b} for parent radionuclides in the contaminated zone, the unsaturated zones, and the saturated zone

Radionuclide	Am-241	Cs-137	Np-237	Pu-238	Pu-239/240	Tc-99	Th-228	Th-230	Th-232	U-234	U-235	U-238
Contaminated Zone ^c	1900	280	70	550	550	0.2	3200	3200	3200	66.8	66.8	66.8
Unsaturated Zone (native soil)	1900	280	70	550	550	0.2	3200	3200	3200	66.8	66.8	66.8
Saturated Zone(RGA)	1900	280	70	550	550	0.2	3200	3200	3200	66.8	66.8	66.8

^a Distribution coefficients for Am-241, Np-237, Th-230, Th-232, U-234 and U-238 were obtained from DOE 2003, page C3-313 and **Table Att. 1. Distribution coefficient of radionuclides and their daughter products in different zones**, page C3-314. It was assumed that the Kd for U-235 was similar to the Kd for U-234 and U-238 since the Kds are chemical specific.

^b Distribution coefficients for Cs-137, Th-228, Pu-238, Pu-239, and Pu-240 were obtained through "Project Communication" with the Waste Disposal Options Project Team from Paducah, KY. The distribution coefficients for Tc-99 are available in **Table C.3.1. Chemical and physical properties of different classes of chemicals identified as COPCs for the C-746-U Landfill** of DOE 2003, page C3-301. **Table 4.5 DUST model input parameters**, page 4-12, has Kds for Tc-99 and Uranium.

^c The contaminated zone is considered to be the first six inches of the Upper Continental Recharge System (UCRS). The remaining thickness off the UCRS is considered to be the unsaturated zone.

Distribution Coefficients (K_d , cm^3/g)^d for progeny radionuclides in the contaminated zone, the unsaturated zones and the saturated zone

Radionuclide	Ac-227	Pa-231	Pb-210	Ra-226	Ra-228	Th-229	U-233	U-236
Contaminated Zone ^e	450	550	270	500	500	3200	66.8	66.8
Unsaturated Zone (native soil)	450	550	270	500	500	3200	66.8	66.8
Saturated Zone(RGA)	450	550	270	500	500	3200	66.8	66.8

^d Distribution coefficients for Ac-227, Pa-231, Pb-210, Ra-226, Ra-228, Th-229, and U-236 were obtained through "Project Communication" with the Waste Disposal Options Project Team from Paducah, KY. It was assumed that the K_d s for U-233 was similar to the K_d s for the other uranium isotopes (i.e. U-234, U-235, U-236 and U-238), since the K_d s are chemical specific.

^e The contaminated zone is considered to be the first six inches of the Upper Continental Recharge System (UCRS). The remaining thickness off the UCRS is considered to be the unsaturated zone.

Attachment II
Calculations and Applicable Parameters from DOE 2009,
Appendix D, Converted into RESRAD Compatible Units

Section A. Runoff Coefficient and Evapotranspiration Coefficient Calculations

Average Annual Runoff (C_r) equation (Yu et al. 1993):

$$C_r = \frac{R_r}{P_r}$$

Runoff Coefficient for the Resident Farmer, Wildlife Worker and Recreational User:

Annual Runoff rate (R_r) = 0.38 m/yr (value converted from PRS 2008b, Table 4.10 Thornthwaite recharge calculations, page 4-26). The lowest annual runoff rate from Table 4.10 was used for the DOE-Owned Property Outside the Limited Area.

$$(15 \text{ in/yr}) \times (2.54 \times 10^{-2} \text{ m/in}) = 0.38 \text{ m/yr}$$

Table 4.10. Thornthwaite recharge calculations

Paducah, Kentucky															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year		
Mean Monthly Air Temperature, F	36.60	38.50	46.50	56.50	65.80	75.30	78.50	76.80	70.00	59.30	45.90	37.30			
Heat Index	0.36	0.60	2.06	4.55	7.42	10.78	12.01	11.33	8.85	5.37	1.93	0.44	65.70		
Unadjusted Potential Evaporation, in.	0.00	0.01	0.03	0.06	0.11	0.15	0.17	0.16	0.13	0.07	0.03	0.00			
Evaporation Adjustment Values	25.50	25.20	30.90	33.00	36.90	37.20	37.50	35.10	31.20	28.80	25.20	24.90			
Adjusted Potential Evaporation, in.	0.00	0.25	0.93	1.98	4.06	5.58	6.38	5.62	4.06	2.02	0.76	0.00			
Monthly Precipitation, in.	5.00	3.90	5.28	4.38	4.02	3.70	3.03	3.30	3.36	2.75	3.72	3.55	45.99		
Precipitation - Adj. Potential Evap., in.	5.00	3.65	4.35	2.40	-0.04	-1.88	-3.35	-2.32	-0.70	0.73	2.96	3.55			
Available for Recharge and Runoff, in.	5.00	3.65	4.35	2.40	0.00	0.00	0.00	0.00	0.00	0.73	2.96	3.55	22.64		
Available for Recharge and Runoff, in/yr													22.64		
- Runoff, in/yr													20	to	15
= Recharge, in/yr													2.64	to	7.64

← runoff rate

Average Annual Precipitation rate (P_r) = 1.24 m/yr (PRS 2008a, Page 1-4)

(49 in/yr) x (2.54E -02 m/in) = 1.24 m/yr

$$C_r = \frac{0.38 \text{ m/yr}}{1.24 \text{ m/yr}}, \quad \boxed{C_r = 0.31}$$

Evapotranspiration coefficient (C_e) equation from Yu et al. 1993:

$$C_e = \frac{ET_r}{(1 - C_r)P_r + IR_r}$$

Evapotranspiration Coefficient for the Resident Farmer, Wildlife Worker and Recreational User:

Evapotranspiration rate (ET_r) = 0.83 m/yr (value converted from information available at the Kentucky Climate Center's website, specifically information for Murray. As indicated on the webpage: "Murray was the highest in the state, with an annual mean potential evapotranspiration of 32.77 inches". This information is available at <http://kyclim.wku.edu/factsheets/meanevapky.html>)

(32.77 in/yr) x (2.54E -02 m/in) =0.83 m/yr

Evapotranspiration Coefficient for the Resident Farmer, Resident Gardener, Outdoor Worker and Recreational User:

$$C_e = \frac{0.83\text{m/yr}}{(1 - 0.31)1.24\text{m/yr} + 0}, \quad \boxed{C_e = 0.97}$$

Section B. Parameters Applicable to the Resident Farmer

Soil Ingestion Rate

Parameters from the Risk Methods Document (DOE 2009), Appendix D				Conversion of Parameter Units into RESRAD Compatible Units																																																
<p>Table D.5. Reasonable maximum exposure assumptions and human intake factors for incidental ingestion soil by a rural resident^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_s \times CF \times EF \times FI \times ED \times IR}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_s \times CF_{rad} \times EF \times FI \times ED \times IR$				Conversion factor = Cf _{rad} (g/mg)	Ingestion rate of soil = IR (mg/d)	Exposure frequency = EF (days/yr)	RESRAD -Soil ingestion (g/yr) obtained by multiplying Cf _{rad} X IR X EF	Receptor																																												
<table border="1"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Chemical concentration in soil = C_s</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Radiological activity = A_s</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Conversion factor = CF</td> <td>kg/mg</td> <td>10⁻⁶</td> <td>----</td> </tr> <tr> <td>Conversion factor = CF_{rad}</td> <td>g/mg</td> <td>10⁻³</td> <td>----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>days/yr</td> <td>350</td> <td>[14]</td> </tr> <tr> <td>Fraction ingested = FI</td> <td>unitless</td> <td>1</td> <td>[14]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>years</td> <td>24 (adult) 6 (child)</td> <td>[14]</td> </tr> <tr> <td>Ingestion rate of soil = IR</td> <td>mg/d</td> <td>100 (adult) 200 (child)</td> <td>[14]</td> </tr> <tr> <td>Body weight = BW</td> <td>kg</td> <td>70 (adult) 15 (child)</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr × day/yr</td> <td>70 × 365 (carcinogen) ED × 365 (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table>				Parameter	Units	Value used	References ^b	Chemical concentration in soil = C _s	mg/kg	Chemical-specific	----	Radiological activity = A _s	pCi/g	Chemical-specific	----	Conversion factor = CF	kg/mg	10 ⁻⁶	----	Conversion factor = CF _{rad}	g/mg	10 ⁻³	----	Exposure frequency = EF	days/yr	350	[14]	Fraction ingested = FI	unitless	1	[14]	Exposure duration = ED	years	24 (adult) 6 (child)	[14]	Ingestion rate of soil = IR	mg/d	100 (adult) 200 (child)	[14]	Body weight = BW	kg	70 (adult) 15 (child)	[14]	Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]	1.00E-03	100	365	36.5	Adult Rural Resident which corresponds to the "Resident Farmer"
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<p>^a Equation from [1].</p> <p>^b References follow Table D.50.</p>				<p>Note: The exposure frequency of 365 d/yr is used in the conversion, instead of 350 d/yr since RESRAD uses time fractions to correct for occupancy.</p>																																																

Section B. Parameters Applicable to the Resident Farmer (cont.)

Inhalation Rate and Mass Loading for Inhalation

Parameters from the Risk Methods Document (DOE 2009), Appendix D		Conversion of Parameter Units into RESRAD Compatible Units																																																				
<p>Table D.7. Reasonable maximum exposure assumptions and human intake factors for inhalation of vapors and particulates emitted from soil by a rural resident^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_s \times EF \times ED \times ET \times \left(\frac{1}{VF} + \frac{1}{PEF} \right) \times IR_{air}}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_s \times EF \times ED \times ET \times CF \times \left(\frac{1}{VF} + \frac{1}{PEF} \right) \times IR_{air}$		<table border="1"> <tr> <td>Total inhalation rate = IR_{air} (m³/hour)</td> <td>Exposure time = ET (hours/day)</td> <td>Exposure frequency = EF (days/yr)</td> <td>RESRAD-Inhalation rate (m³/yr) obtained by multiplying IF X ET X EF</td> <td>Receptor</td> </tr> <tr> <td>0.833</td> <td>24</td> <td>365</td> <td>7,297</td> <td>Adult Rural Resident which corresponds to the "Resident Farmer"</td> </tr> </table> <p>Note: The exposure frequency of 365 d/yr is used in the conversion, instead of 350 d/yr since RESRAD uses time fractions to correct for occupancy.</p> <table border="1"> <tr> <td>PEF (m³/kg)</td> <td>Conversion from kg to g</td> <td>PEF (m³/g)</td> <td>RESRAD-Mass Loading for Inhalation (g/m³) = 1/PEF</td> <td>Receptor</td> </tr> <tr> <td>9.30E+08</td> <td>1000</td> <td>930000</td> <td>1.08E-06</td> <td>Adult Rural Resident which corresponds to the "Resident Farmer"</td> </tr> </table>					Total inhalation rate = IR _{air} (m ³ /hour)	Exposure time = ET (hours/day)	Exposure frequency = EF (days/yr)	RESRAD-Inhalation rate (m ³ /yr) obtained by multiplying IF X ET X EF	Receptor	0.833	24	365	7,297	Adult Rural Resident which corresponds to the "Resident Farmer"	PEF (m ³ /kg)	Conversion from kg to g	PEF (m ³ /g)	RESRAD-Mass Loading for Inhalation (g/m ³) = 1/PEF	Receptor	9.30E+08	1000	930000	1.08E-06	Adult Rural Resident which corresponds to the "Resident Farmer"																												
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<p>^a Equation from [20].</p> <p>^b References follow Table D.50.</p> <p>^c PEFs from KRAGS use EPA default factors, except for the Q/C value which is based on the lower 90% confidence interval of the mean dispersion factor of climactic zone VII of Table 3 in the SSL Technical Background document [41].</p>																																																						

Section B. Parameters Applicable to the Resident Farmer (cont.)

External Gamma Shielding Factor and Exposure Duration

Parameters from the Risk Methods Document (DOE 2009), Appendix D		Conversion of Parameter Units into RESRAD Compatible Units																											
<p>Table D.8. Reasonable maximum exposure assumptions and human intake factors for external exposure to ionizing radiation from soil by a rural resident^a</p> <p>Equation:</p> $\text{Absorbed Dose } [(pCi \times \text{year})/g] = A_s \times ED \times EF \times (1 - S_e) \times T_e$ <table border="1"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Activity in soil = A_s</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Exposure duration = ED</td> <td>year</td> <td>24 (adult) 6 (child)</td> <td>[14]</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/day</td> <td>350/365</td> <td>[14]</td> </tr> <tr> <td>Gamma shielding factor = S_e</td> <td>unitless</td> <td>0.2</td> <td>[20]</td> </tr> <tr> <td>Gamma exposure time factor = T_e</td> <td>hr/hr</td> <td>24/24</td> <td>[20]</td> </tr> </tbody> </table> <p>^a Equation from [20]. ^b References follow Table D.50. ^c AC cannot be greater than 1.</p>		Parameter	Units	Value used	References ^b	Activity in soil = A_s	pCi/g	Chemical-specific	----	Exposure duration = ED	year	24 (adult) 6 (child)	[14]	Exposure frequency = EF	day/day	350/365	[14]	Gamma shielding factor = S_e	unitless	0.2	[20]	Gamma exposure time factor = T_e	hr/hr	24/24	[20]	<p>Exposure duration = ED (years) -no conversion required since it is in RESRAD units</p>	<p>Gamma shielding factor = S_e (unitless)</p>	<p>Receptor</p>	<p>RESRAD external gamma shielding factor</p>
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		24	0.2	Adult Rural Resident which corresponds to the "Resident Farmer"	0.8 (1 - 0.2)																								

Indoor and Outdoor Occupancy Fractions

Resident Farmer Occupancy Fractions		
	Days	Fractions for RESRAD
1/3 of the time outdoors	117	0.32
2/3 of the time indoors	233	0.64
Total Days Onsite	350	
Total Fraction		0.96

Note: The Resident Farmer spends 350 days/yr on site.

Section B. Parameters Applicable to the Resident Farmer (cont.)

Fruit, Non-Leafy Vegetable, and Grain Consumption and Leafy Vegetables Consumption

Parameters from the Risk Methods Document (DOE 2009), Appendix D		Conversion of Parameter Units into RESRAD Compatible Units																																									
<p>Table D.9. Reasonable maximum exposure assumptions and human intake factors for consumption of home-grown vegetables by a rural resident^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{\text{vegetables}} \times FI_v \times IR_v \times EF \times ED}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{\text{vegetables}} \times FI_v \times IR_v \times EF \times ED \times CF$																																											
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<p>Note: This table is for home grown vegetables, it does not specify fruit, and grain. The ratio of this value is used for RESRAD as the Fruit, vegetable, and grain consumption (kg/yr) and for Leafy Vegetables (kg/yr).</p>																																											

Section B. Parameters Applicable to the Resident Farmer (cont.)

Milk Consumption

Parameters from the Risk Methods Document (DOE 2009), Appendix D				Conversion of Parameter Units into RESRAD Compatible Units																																								
<p>Table D.11. Reasonable maximum exposure assumptions and human intake factors for consumption of milk by a rural resident^a</p> <hr/> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{\text{milk}} \times FI_m \times IR_m \times EF \times ED}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{\text{milk}} \times FI_m \times IR_m \times EF \times ED$				<p>Milk ingestion rate^c = IR_b (kg/day)</p>	<p>Exposure frequency = EF (d/yr)</p>	<p>Milk consumption (kg/yr) obtained by multiplying IR X EF</p>	<p>RESRAD-Milk consumption (L/yr) obtained by dividing the milk consumption (kg/yr) by the density of milk and then multiplying by 1000</p>	<p>Receptor</p>																																				
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<p>^a Equation from [1]. ^b References follow Table D.50. ^c Ingestion values represent the 95th percentile of individuals who consume this food group.</p>				<p>Density of milk, cow, whole= 1,030 kg/m³ 1 cubic meter = 1,000 liters This density was obtained from an online source: http://physics.info/density/</p>																																								

Section B. Parameters Applicable to the Resident Farmer (cont.)

Meat and Poultry Consumption

Parameters from the Risk Methods Document (DOE 2009), Appendix D		Conversion of Parameter Units into RESRAD Compatible Units																																					
<p>Table D.10. Reasonable maximum exposure assumptions and human intake factors for consumption of beef by a rural resident^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{\text{beef}} \times FI_b \times IR_b \times EF \times ED}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{\text{beef}} \times FI_b \times IR_b \times EF \times ED$		<p>Beef ingestion rate^c = IR_b (kg/day)</p>	<p>Exposure frequency = EF (d/yr)</p>																																				
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<p>^a Equation from [1].</p> <p>^b References follow Table D.50.</p> <p>^c Ingestion values represent the 95th percentile of individuals who consume this food group.</p>		<p>Notes: This table only includes beef consumption, and the RESRAD parameter is for meat and poultry. Tables D.12, and D.13 in Appendix D have information for poultry and pork.</p>																																					

Section B. Parameters Applicable to the Resident Farmer (cont.)

Meat and Poultry Consumption (cont.)

Parameters from the Risk Methods Document (DOE 2009), Appendix D		Conversion of Parameter Units into RESRAD Compatible Units																																													
<p>Table D.12. Reasonable maximum exposure assumptions and human intake factors for consumption of poultry by a rural resident^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{\text{poultry}} \times FI_p \times IR_p \times EF \times ED}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{\text{poultry}} \times FI_p \times IR_p \times EF \times ED$ <table border="1"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Chemical concentration in poultry = C_{poultry}</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>See Table D.48</td> </tr> <tr> <td>Radiological activity in poultry = A_{poultry}</td> <td>pCi/kg</td> <td>Chemical-specific</td> <td>See Table D.48</td> </tr> <tr> <td>Ingestion rate^c = IR_p</td> <td>kg/day</td> <td>0.07 (child 1 – 7) 0.17 (adult 8 – 41)</td> <td>[23]</td> </tr> <tr> <td>Diet fraction = FI_p</td> <td>unitless</td> <td>1</td> <td>[5]</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/year</td> <td>350</td> <td></td> </tr> <tr> <td>Exposure duration = ED</td> <td>years</td> <td>6 (child) 24 (adult)</td> <td>[14]</td> </tr> <tr> <td>Body weight = BW</td> <td>kg</td> <td>15 (child) 70 (adult)</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr \times day/yr</td> <td>70 \times 365 (carcinogen) ED \times 365 (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table>		Parameter	Units	Value used	References ^b	Chemical concentration in poultry = C_{poultry}	mg/kg	Chemical-specific	See Table D.48	Radiological activity in poultry = A_{poultry}	pCi/kg	Chemical-specific	See Table D.48	Ingestion rate ^c = IR_p	kg/day	0.07 (child 1 – 7) 0.17 (adult 8 – 41)	[23]	Diet fraction = FI_p	unitless	1	[5]	Exposure frequency = EF	day/year	350		Exposure duration = ED	years	6 (child) 24 (adult)	[14]	Body weight = BW	kg	15 (child) 70 (adult)	[14]	Averaging time = AT	yr \times day/yr	70 \times 365 (carcinogen) ED \times 365 (noncarcinogen)	[14]	<table border="1"> <thead> <tr> <th>Poultry ingestion rate^c = IR_p (kg/day)</th> <th>Exposure frequency = EF (d/yr)</th> <th>Poultry consumption (kg/yr) obtained by multiplying $IR \times EF$</th> <th>Receptor</th> </tr> </thead> <tbody> <tr> <td>0.17</td> <td>350</td> <td>59.5</td> <td>Adult Rural Resident which corresponds to the "Resident Farmer"</td> </tr> </tbody> </table> <p>Notes: This table only includes poultry consumption, and the RESRAD parameter is for meat and poultry. Table D.10, and D.13 in Appendix D have information for beef and pork.</p>		Poultry ingestion rate ^c = IR_p (kg/day)	Exposure frequency = EF (d/yr)	Poultry consumption (kg/yr) obtained by multiplying $IR \times EF$	Receptor	0.17	350	59.5	Adult Rural Resident which corresponds to the "Resident Farmer"
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Section B. Parameters Applicable to the Resident Farmer (cont.)

Meat and Poultry Consumption (cont.)

Parameters from the Risk Methods Document (DOE 2009), Appendix D		Conversion of Parameter Units into RESRAD Compatible Units																																														
<p>Table D.13. Reasonable maximum exposure assumptions and human intake factors for consumption of pork by a rural resident^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{\text{pork}} \times FI_{\text{pork}} \times IR_{\text{pork}} \times EF \times ED}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{\text{pork}} \times FI_{\text{pork}} \times IR_{\text{pork}} \times EF \times ED$ <table border="1"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Chemical concentration in pork = C_{pork}</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>See Table D.49</td> </tr> <tr> <td>Radiological activity in pork = A_{pork}</td> <td>pCi/kg</td> <td>Chemical-specific</td> <td>See Table D.49</td> </tr> <tr> <td>Pork ingestion rate^c = IR_{pork}</td> <td>kg/day</td> <td>0.03 (child 1 – 7) 0.08 (adult 8 – 41)</td> <td>[23]</td> </tr> <tr> <td>Diet fraction = FI_{pork}</td> <td>unitless</td> <td>1</td> <td>[21]</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>d/year</td> <td>350</td> <td>[14]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>years</td> <td>6 (child) 24 (adult)</td> <td>[14]</td> </tr> <tr> <td>Body weight (adult) = BW</td> <td>kg</td> <td>15 (child) 70 (adult)</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr \times day/yr</td> <td>70 \times 365 (carcinogen) ED \times 365 (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table> <p>^a Equation from [1]. ^b References follow Table D.50. ^c Ingestion values represent the 95th percentile of individuals who consume this food group.</p>		Parameter	Units	Value used	References ^b	Chemical concentration in pork = C_{pork}	mg/kg	Chemical-specific	See Table D.49	Radiological activity in pork = A_{pork}	pCi/kg	Chemical-specific	See Table D.49	Pork ingestion rate ^c = IR_{pork}	kg/day	0.03 (child 1 – 7) 0.08 (adult 8 – 41)	[23]	Diet fraction = FI_{pork}	unitless	1	[21]	Exposure frequency = EF	d/year	350	[14]	Exposure duration = ED	years	6 (child) 24 (adult)	[14]	Body weight (adult) = BW	kg	15 (child) 70 (adult)	[14]	Averaging time = AT	yr \times day/yr	70 \times 365 (carcinogen) ED \times 365 (noncarcinogen)	[14]	<table border="1"> <thead> <tr> <th>Pork ingestion rate^c = IR_b (kg/day)</th> <th>Exposure frequency = EF (d/yr)</th> <th>Pork consumption (kg/yr) obtained by multiplying $IR \times EF$</th> <th>Receptor</th> </tr> </thead> <tbody> <tr> <td>0.08</td> <td>350</td> <td>28</td> <td>Adult Rural Resident which corresponds to the "Resident Farmer"</td> </tr> </tbody> </table> <p>Notes: This table only includes pork consumption, and the RESRAD parameter is for meat and poultry. Table D.10, and D.12 in Appendix D have information for beef and poultry.</p> <table border="1"> <tr> <td>RESRAD- Meat and Poultry consumption (kg/yr) obtained by doing an average of the kg/yr for pork, beef and poultry</td> </tr> <tr> <td>154</td> </tr> </table>	Pork ingestion rate ^c = IR_b (kg/day)	Exposure frequency = EF (d/yr)	Pork consumption (kg/yr) obtained by multiplying $IR \times EF$	Receptor	0.08	350	28	Adult Rural Resident which corresponds to the "Resident Farmer"	RESRAD- Meat and Poultry consumption (kg/yr) obtained by doing an average of the kg/yr for pork, beef and poultry	154
Parameter	Units	Value used	References ^b																																													
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Section B. Parameters Applicable to the Wildlife Worker

Soil Ingestion Rate

Parameters from the Risk Methods Document (DOE 2009), Appendix D				Conversion of Parameter Units into RESRAD Compatible Units				
<p>Table D.5. Reasonable maximum exposure assumptions and human intake factors for incidental ingestion soil by a rural resident^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_s \times CF \times EF \times FI \times ED \times IR}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_s \times CF_{rad} \times EF \times FI \times ED \times IR$				Conversion factor = Cf _{rad} (g/mg)	Ingestion rate of soil = IR (mg/d)	Exposure frequency = EF (days/yr)	RESRAD -Soil ingestion (g/yr) obtained by multiplying Cf _{rad} X IR X EF	Receptor
Parameter	Units	Value used	References ^b	1.00E-03	100	365	36.5	Rural Resident which corresponds to the "Wildlife Worker". See note below.
Chemical concentration in soil = C _s	mg/kg	Chemical-specific	----					
Radiological activity = A _s	pCi/g	Chemical-specific	----					
Conversion factor = CF	kg/mg	10 ⁻⁶	----					
Conversion factor = CF _{rad}	g/mg	10 ⁻³	----					
Exposure frequency = EF	days/yr	350	[14]					
Fraction ingested = FI	unitless	1	[14]					
Exposure duration = ED	years	24 (adult) 6 (child)	[14]					
Ingestion rate of soil = IR	mg/d	100 (adult) 200 (child)	[14]					
Body weight = BW	kg	70 (adult) 15 (child)	[14]					
Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]					
<p>^a Equation from [1].</p> <p>^b References follow Table D.50.</p>				<p>Note: It is assumed that the Wildlife Worker has the same soil ingestion rate as the Rural Resident in DOE 2009, Table D.5. As mentioned earlier in the table of parameters, the Wildlife Worker duties include tending to crops (farming). The soil ingestion rate available in DOE 2009 for the industrial worker is 50 mg/d which is half of what is being assumed. The soil ingestion rate in DOE 2009 for the excavation worker is 480 mg/d which is considered too high for duties performed by the Wildlife Worker.</p>				

Section B. Parameters Applicable to the Wildlife Worker (cont.)

Inhalation Rate and Mass Loading for Inhalation

Parameters from the Risk Methods Document (DOE 2009), Appendix D				Conversion of Parameter Units into RESRAD Compatible Units																																																																
<p>Table D.38. Reasonable maximum exposure assumptions and human intake factors for inhalation of vapors and particulates emitted from soil by an excavation worker³</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_s \times EF \times ED \times ET \times \left(\frac{1}{VF} + \frac{1}{PEF}\right) \times IR_{air}}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_s \times EF \times ED \times ET \times CF \times \left(\frac{1}{PEF}\right) \times IR_{air}$ <table border="1"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Concentration in soil or sediment = C_s</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Activity in soil or sediment = A_s</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Conversion factor = CF</td> <td>g/kg</td> <td>10³</td> <td>----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/yr</td> <td>185</td> <td>[14]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>years</td> <td>25</td> <td>[20]</td> </tr> <tr> <td>Exposure time = ET</td> <td>hours/day</td> <td>8</td> <td>[14]</td> </tr> <tr> <td>Volatilization factor = VF</td> <td>m³/kg</td> <td>Chemical-specific</td> <td>[19]</td> </tr> <tr> <td>Particulate emission factor = PEF</td> <td>m³/kg</td> <td>6.2 × 10⁸</td> <td>[14]</td> </tr> <tr> <td>Inhalation rate = IR_{air}</td> <td>m³/hour</td> <td>2.5</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr × day/yr</td> <td>70 × 365 (carcinogen) ED × 365 (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table> <p>^a Equation from [20]. ^b References follow Table D.50. ^c PEFs from KRAGS use EPA default factors, except for the Q/C value which is based on the lower 90% confidence interval of the mean dispersion factor of climactic zone VII of Table 3 in the SSL Technical Background document [41].</p>				Parameter	Units	Value used	References ^b	Concentration in soil or sediment = C _s	mg/kg	Chemical-specific	----	Activity in soil or sediment = A _s	pCi/g	Chemical-specific	----	Conversion factor = CF	g/kg	10 ³	----	Exposure frequency = EF	day/yr	185	[14]	Exposure duration = ED	years	25	[20]	Exposure time = ET	hours/day	8	[14]	Volatilization factor = VF	m ³ /kg	Chemical-specific	[19]	Particulate emission factor = PEF	m ³ /kg	6.2 × 10 ⁸	[14]	Inhalation rate = IR _{air}	m ³ /hour	2.5	[14]	Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]	<table border="1"> <thead> <tr> <th>Total inhalation rate = IR_{air} (m³/hour)</th> <th>Exposure time = ET (hours/day)</th> <th>Exposure frequency = EF (days/yr)</th> <th>RESRAD-Inhalation rate (m³/yr) obtained by multiplying IF X ET X EF</th> <th>Receptor</th> </tr> </thead> <tbody> <tr> <td>2.5</td> <td>24</td> <td>365</td> <td>21,900 (20,000 is the maximum allowed in the code)</td> <td>Excavation Worker which corresponds to the "Wildlife Worker"</td> </tr> </tbody> </table> <p>Note: The value of 21,900 is higher than the maximum value allowed in the RESRAD code which is 20,000.</p> <p>The exposure frequency of 365 d/yr is used in the conversion, since RESRAD uses time fractions to correct for occupancy.</p> <table border="1"> <thead> <tr> <th>PEF (m³/kg)</th> <th>Conversion from kg to g</th> <th>PEF (m³/g)</th> <th>RESRAD - Mass Loading for Inhalation (g/m³) = 1/PEF</th> <th>Receptor</th> </tr> </thead> <tbody> <tr> <td>6.20E+08</td> <td>1000</td> <td>6.20E+05</td> <td>1.61E-06</td> <td>Excavation Worker which corresponds to the "Wildlife Worker"</td> </tr> </tbody> </table>	Total inhalation rate = IR _{air} (m ³ /hour)	Exposure time = ET (hours/day)	Exposure frequency = EF (days/yr)	RESRAD-Inhalation rate (m ³ /yr) obtained by multiplying IF X ET X EF	Receptor	2.5	24	365	21,900 (20,000 is the maximum allowed in the code)	Excavation Worker which corresponds to the "Wildlife Worker"	PEF (m ³ /kg)	Conversion from kg to g	PEF (m ³ /g)	RESRAD - Mass Loading for Inhalation (g/m ³) = 1/PEF	Receptor	6.20E+08	1000	6.20E+05	1.61E-06	Excavation Worker which corresponds to the "Wildlife Worker"
Parameter	Units	Value used	References ^b																																																																	
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6.20E+08	1000	6.20E+05	1.61E-06	Excavation Worker which corresponds to the "Wildlife Worker"																																																																

Section B. Parameters Applicable to the Wildlife Worker (cont.)

External Gamma Shielding Factor and Exposure Duration

Parameters from the Risk Methods Document (DOE 2009), Appendix D	Conversion of Parameter Units into RESRAD Compatible Units																											
<p>Table D.40. Reasonable maximum exposure assumptions and human intake factors for external exposure to ionizing radiation from soil by an excavation worker^a</p> <p>Equation:</p> $\text{Absorbed Dose } [(pCi \times \text{year})/g] = A_s \times ED \times EF \times (1 - S_e) \times T_e$ <table border="1" data-bbox="243 597 1220 792"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Activity in soil or sediment = A_s</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>-----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/day</td> <td>185/365</td> <td>[14], [20]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>year</td> <td>25</td> <td>[20]</td> </tr> <tr> <td>Gamma shielding factor = S_e</td> <td>unitless</td> <td>0.2</td> <td>[20]</td> </tr> <tr> <td>Gamma exposure time factor = T_e</td> <td>hr/hr</td> <td>8/24</td> <td>[20]</td> </tr> </tbody> </table> <p>^a Equation from [20]. ^b References follow Table D.50.</p>	Parameter	Units	Value used	References ^b	Activity in soil or sediment = A_s	pCi/g	Chemical-specific	-----	Exposure frequency = EF	day/day	185/365	[14], [20]	Exposure duration = ED	year	25	[20]	Gamma shielding factor = S_e	unitless	0.2	[20]	Gamma exposure time factor = T_e	hr/hr	8/24	[20]	Exposure duration = ED (years) -no conversion required since it is in RESRAD units	Gamma shielding factor = S_e (unitless)	Receptor	RESRAD external gamma shielding factor
	Parameter	Units	Value used	References ^b																								
Activity in soil or sediment = A_s	pCi/g	Chemical-specific	-----																									
Exposure frequency = EF	day/day	185/365	[14], [20]																									
Exposure duration = ED	year	25	[20]																									
Gamma shielding factor = S_e	unitless	0.2	[20]																									
Gamma exposure time factor = T_e	hr/hr	8/24	[20]																									
25	0.2	Excavation Worker which corresponds to the "Outdoor Worker"	0.8 (1 - 0.2)																									

Section B. Parameters Applicable to the Wildlife Worker (cont.)

Outdoor Time Fraction

<p>Parameters from the Risk Methods Document (DOE 2009), Appendix D</p> <p>Table D.40. Reasonable maximum exposure assumptions and human intake factors for external exposure to ionizing radiation from soil by an excavation worker^a</p> <hr/> <p>Equation:</p> $\text{Absorbed Dose } [(pCi \times \text{year})/g] = A_s \times ED \times EF \times (1 - S_e) \times T_e$ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Parameter</th> <th style="text-align: left;">Units</th> <th style="text-align: left;">Value used</th> <th style="text-align: left;">References^b</th> </tr> </thead> <tbody> <tr> <td>Activity in soil or sediment = A_s</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>-----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/day</td> <td>185/365</td> <td>[14], [20]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>year</td> <td>25</td> <td>[20]</td> </tr> <tr> <td>Gamma shielding factor = S_e</td> <td>unitless</td> <td>0.2</td> <td>[20]</td> </tr> <tr> <td>Gamma exposure time factor = T_e</td> <td>hr/hr</td> <td>8/24</td> <td>[20]</td> </tr> </tbody> </table> <p>^a Equation from [20]. ^b References follow Table D.50.</p>	Parameter	Units	Value used	References ^b	Activity in soil or sediment = A_s	pCi/g	Chemical-specific	-----	Exposure frequency = EF	day/day	185/365	[14], [20]	Exposure duration = ED	year	25	[20]	Gamma shielding factor = S_e	unitless	0.2	[20]	Gamma exposure time factor = T_e	hr/hr	8/24	[20]	<p>Conversion of Parameter Units into RESRAD Compatible Units</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">185 d/yr ÷ 365 d/yr=</td> <td style="text-align: center;">0.51</td> </tr> <tr> <td style="text-align: center;">8 h ÷ 24 h=</td> <td style="text-align: center;">0.33</td> </tr> <tr> <td style="text-align: center;">Outdoor time fraction for the Worker 0.51 x 0.33=</td> <td style="text-align: center;">0.17</td> </tr> </table> <p>Note: It is assumed the Worker is outdoors 185 d/yr and works 8 hr/d.</p>	185 d/yr ÷ 365 d/yr=	0.51	8 h ÷ 24 h=	0.33	Outdoor time fraction for the Worker 0.51 x 0.33=	0.17
Parameter	Units	Value used	References ^b																												
Activity in soil or sediment = A_s	pCi/g	Chemical-specific	-----																												
Exposure frequency = EF	day/day	185/365	[14], [20]																												
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Gamma shielding factor = S_e	unitless	0.2	[20]																												
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Outdoor time fraction for the Worker 0.51 x 0.33=	0.17																														

Section C. Parameters Applicable to the Recreational User

Soil Ingestion Rate

Parameters from the Risk Methods Document (DOE 2009), Appendix D				Conversion of Parameter Units into RESRAD Compatible Units																																																								
<p>Table D.15. Reasonable maximum exposure assumptions and human intake factors for incidental ingestion of sediment by a recreational user^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{sed} \times CF \times EF \times ED \times ET \times CF_2 \times IR \times FI}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{sed} \times CF_{rad} \times EF \times ED \times ET \times CF_2 \times IR \times FI$				Conversion factor = Cf _{rad} (g/mg)	Ingestion rate of soil = IR (mg/d)	Exposure frequency = EF (days/yr)	RESRAD -Soil ingestion (g/yr) obtained by multiplying Cf _{rad} X IR X EF	Receptor																																																				
<table border="1"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Concentration in sediment = C_{sed}</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Conversion factor = CF</td> <td>kg/mg</td> <td>10⁶</td> <td>----</td> </tr> <tr> <td>Activity in soil = A_{sed}</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Conversion factor = CF_{rad}</td> <td>g/mg</td> <td>10³</td> <td>----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/yr</td> <td>104 (adult) 140 (child and teen)</td> <td>[14]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>year</td> <td>12 (adult) 12 (teen) 6 (child)</td> <td>[14]</td> </tr> <tr> <td>Exposure time = ET</td> <td>hr/day</td> <td>5</td> <td>[14]</td> </tr> <tr> <td>Conversion factor = CF₂</td> <td>day/hr</td> <td>1/24</td> <td>----</td> </tr> <tr> <td>Ingestion rate = IR</td> <td>mg/day</td> <td>100 (adult) 100 (teen) 200 (child)</td> <td>[14]</td> </tr> <tr> <td>Fraction ingested = FI</td> <td>unitless</td> <td>1</td> <td>[14]</td> </tr> <tr> <td>Body weight = BW</td> <td>kg</td> <td>70 (adult) 43 (teen) 15 (child)</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr × day/yr</td> <td>70 × 365 (carcinogen) ED × 365 (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table>				Parameter	Units	Value used	References ^b	Concentration in sediment = C _{sed}	mg/kg	Chemical-specific	----	Conversion factor = CF	kg/mg	10 ⁶	----	Activity in soil = A _{sed}	pCi/g	Chemical-specific	----	Conversion factor = CF _{rad}	g/mg	10 ³	----	Exposure frequency = EF	day/yr	104 (adult) 140 (child and teen)	[14]	Exposure duration = ED	year	12 (adult) 12 (teen) 6 (child)	[14]	Exposure time = ET	hr/day	5	[14]	Conversion factor = CF ₂	day/hr	1/24	----	Ingestion rate = IR	mg/day	100 (adult) 100 (teen) 200 (child)	[14]	Fraction ingested = FI	unitless	1	[14]	Body weight = BW	kg	70 (adult) 43 (teen) 15 (child)	[14]	Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]	1.00E-03	100	365	36.5	Recreational User-Teen which corresponds to the "Recreational User"
Parameter	Units	Value used	References ^b																																																									
Concentration in sediment = C _{sed}	mg/kg	Chemical-specific	----																																																									
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<p>^a Equation after [1].</p> <p>^b References follow Table D.50.</p>				<p>Notes: The exposure frequency of 365 d/yr is used in the conversion, instead of 140 d/yr (teen) since RESRAD uses time fractions to correct for occupancy.</p>																																																								

Section C. Parameters Applicable to the Recreational User (cont.)

Inhalation Rate and Mass Loading for Inhalation

Parameters from the Risk Methods Document (DOE 2009), Appendix D				Conversion of Parameter Units into RESRAD Compatible Units																																																																								
<p>Table D.17. Reasonable maximum exposure assumptions and human intake factors for inhalation of vapors or particulates emitted from sediment by a recreational user^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{sed} \times EF \times ED \times ET \times \left(\frac{1}{VF} + \frac{1}{PEF} \right) \times IR_{air}}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{sed} \times EF \times ED \times ET \times CF \times \left(\frac{1}{PEF} \right) \times IR_{air}$ <table border="1"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Concentration in sediment = C_{sed}</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Activity in sediment = A_{sed}</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/year</td> <td>104 (adult) 140 (teen) 140 (child)</td> <td>[14]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>years</td> <td>12 (adult) 12 (teen) 6 (child)</td> <td>[14]</td> </tr> <tr> <td>Exposure time = ET</td> <td>hour/day</td> <td>5</td> <td>[14]</td> </tr> <tr> <td>Conversion factor = CF</td> <td>g/kg</td> <td>10^3</td> <td>----</td> </tr> <tr> <td>Volatilization factor = VF</td> <td>m^3/kg</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Particulate emission factor^c = PEF</td> <td>m^3/kg</td> <td>9.3×10^8</td> <td>[14]</td> </tr> <tr> <td>Total inhalation rate = IR_{air}</td> <td>$m^3/hour$</td> <td>2.5</td> <td>[14]</td> </tr> <tr> <td>Body weight = BW</td> <td>kg</td> <td>70 (adult) 43 (teen) 15 (child)</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr \times day/yr</td> <td>70×365 (carcinogen) $ED \times 365$ (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table>				Parameter	Units	Value used	References ^b	Concentration in sediment = C_{sed}	mg/kg	Chemical-specific	----	Activity in sediment = A_{sed}	pCi/g	Chemical-specific	----	Exposure frequency = EF	day/year	104 (adult) 140 (teen) 140 (child)	[14]	Exposure duration = ED	years	12 (adult) 12 (teen) 6 (child)	[14]	Exposure time = ET	hour/day	5	[14]	Conversion factor = CF	g/kg	10^3	----	Volatilization factor = VF	m^3/kg	Chemical-specific	----	Particulate emission factor ^c = PEF	m^3/kg	9.3×10^8	[14]	Total inhalation rate = IR_{air}	$m^3/hour$	2.5	[14]	Body weight = BW	kg	70 (adult) 43 (teen) 15 (child)	[14]	Averaging time = AT	yr \times day/yr	70×365 (carcinogen) $ED \times 365$ (noncarcinogen)	[14]	<table border="1"> <thead> <tr> <th>Total inhalation rate = IR_{air} ($m^3/hour$)</th> <th>Exposure time = ET (hours/day)</th> <th>Exposure frequency = EF (days/yr)</th> <th>RESRAD-Inhalation rate (m^3/yr) obtained by multiplying IF X ET X EF</th> <th>Receptor</th> </tr> </thead> <tbody> <tr> <td>2.5</td> <td>24</td> <td>365</td> <td>21,900 (20,000 is the maximum allowed in the code)</td> <td>Recreational User-Teen which corresponds to the "Recreational User"</td> </tr> </tbody> </table> <p>Notes: The value of 21,900 is higher than the maximum value allowed in the RESRAD code which is 20,000. The exposure frequency of 365 d/yr is used in the conversion, instead of 140 d/yr (teen) since RESRAD uses time fractions to correct for occupancy.</p> <table border="1"> <thead> <tr> <th>PEF (m^3/kg)</th> <th>Conversion from kg to g</th> <th>PEF (m^3/g)</th> <th>RESRAD - Mass Loading for Inhalation (g/m^3) = $1/PEF$</th> <th>Receptor</th> </tr> </thead> <tbody> <tr> <td>9.30E+08</td> <td>1000</td> <td>930000</td> <td>1.08E-06</td> <td>Recreational User-Teen which corresponds to the "Recreational User"</td> </tr> </tbody> </table>					Total inhalation rate = IR_{air} ($m^3/hour$)	Exposure time = ET (hours/day)	Exposure frequency = EF (days/yr)	RESRAD-Inhalation rate (m^3/yr) obtained by multiplying IF X ET X EF	Receptor	2.5	24	365	21,900 (20,000 is the maximum allowed in the code)	Recreational User-Teen which corresponds to the "Recreational User"	PEF (m^3/kg)	Conversion from kg to g	PEF (m^3/g)	RESRAD - Mass Loading for Inhalation (g/m^3) = $1/PEF$	Receptor	9.30E+08	1000	930000	1.08E-06	Recreational User-Teen which corresponds to the "Recreational User"
Parameter	Units	Value used	References ^b																																																																									
Concentration in sediment = C_{sed}	mg/kg	Chemical-specific	----																																																																									
Activity in sediment = A_{sed}	pCi/g	Chemical-specific	----																																																																									
Exposure frequency = EF	day/year	104 (adult) 140 (teen) 140 (child)	[14]																																																																									
Exposure duration = ED	years	12 (adult) 12 (teen) 6 (child)	[14]																																																																									
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<p>^a Equation after [1].</p> <p>^b References follow Table D.50.</p> <p>^c PEFs from KRAGS use EPA default factors, except for the Q/C value which is based on the lower 90% confidence interval of the mean dispersion factor of climactic zone VII of Table 3 in the SSL Technical Background document [41].</p>																																																																												

Section C. Parameters Applicable to the Recreational User (cont.)

External Gamma Shielding Factor and Exposure Duration

Parameters from the Risk Methods Document (DOE 2009), Appendix D		Conversion of Parameter Units into RESRAD Compatible Units					
<p>Table D.18. Reasonable maximum exposure assumptions and human intake factors for external exposure to ionizing radiation from sediment by a recreational user^a</p> <p>Equation:</p> $\text{Absorbed Dose [(pCi} \times \text{year)/g]} = A_{\text{sed}} \times ED \times EF \times (1 - S_g) \times T_e$							
Parameter	Units	Value used	References^b	Exposure duration = ED (years) -no conversion required since it is in RESRAD units	Gamma shielding factor = Se (unitless)	Receptor	RESRAD external gamma shielding factor
Activity in soil = A_{sed}	pCi/g	Chemical-specific	----				
Exposure duration = ED	year	12 (adult) 12 (teen) 6 (child)	[14]	25	0	Recreational User-Teen which corresponds to the "Recreational User"	1 (1 - 0)
Exposure frequency = EF	day/day	104/365 (adult) 140/365 (teen) 140/365 (child)	[14]				
Gamma shielding factor = S_g	unitless	0.0	[40]				
Gamma exposure time factor = T_e	hr/hr	5/24	[20]				
^a Equation from [20]. ^b References follow Table D.50.							

Outdoor Time Fraction (Recreational User-Teenager)

140 d/yr ÷ 365 d/yr=	0.38
5 h ÷ 24 h=	0.21
Outdoor time fraction for the RU-teenager 0.38 x 0.21=	0.08
Note: The Recreational User is considered to be a teenager who will spend 5 h/d, 140 d/yr on the contaminated site.	

Section E. Parameters Applicable to Beef and Dairy from the Risk Methods Document (DOE 2009), Appendix D

Table D.46. Reasonable maximum exposure assumptions for concentration or activity of COPCs in beef^a

Equations:

$$C_{beef} = F_{beef} \times [(C_{forage} \times AC \times f_s \times Q_f) + (C_s \times AC \times Q_s) + (C_{sw} \times CF_{rad} \times Q_{sw})]$$

$$C_{forage} = (C_s \times R_{upp}) + (C_s \times R_{es})$$

Parameter	Units	Value used	References ^b
Chemical concentration in beef = C_{beef}	mg/kg or pCi/g	Chemical-specific	Calculated
Forage-beef transfer factor = F_{beef}	day/kg	Chemical-specific	----
Chemical concentration in pasture = C_{forage}	mg/kg or pCi/g	Chemical-specific	Calculated
Area of contact ^c = AC	unitless	AS/AD	----
Area of SWMU = AS	acres	SWMU-specific	----
Area of beef range = AD	acres	2	[29]
Fraction of beef's food from site when on site = f_s	unitless	1.0	[5]
Quantity of pasture ingested daily by beef = Q_f	kg/day	25	[25]
Chemical concentration in soil or sediment = C_s	mg/kg or pCi/g	Chemical-specific	----
Quantity of soil ingested daily by beef = Q_s	kg/day	1	[26]
Contaminant concentration in water = C_w	mg/L or pCi/L	Chemical-specific	----
Conversion factor for radionuclides = CF_{rad}	kg/g	10^{-3}	----
Quantity of water ingested daily by beef = Q_w	L/day	50	[25]
Soil to plant uptake (dry) = R_{upp}	unitless	Chemical-specific or $38 \times K_{ow}^{-0.58}$	[8]
Soil resuspension multiplier = R_{es}	unitless	0.25	[3]

^a Equations after [1], [2], [3], [4].

^b All references follow Table D.50.

^c AC cannot be greater than 1.

^d All ingested water is considered to be from SWMU or SWMU area.

Values that were used to determine input parameters are highlighted.

Section E. Parameters Applicable to Beef and Dairy from the Risk Methods Document (DOE 2009), Appendix D (cont.)

Table D.47. Reasonable maximum exposure assumptions for concentration or activity of COPCs in milk^a

Equations:

$$C_{milk} = F_{milk} \times [(C_{forage} \times AC \times f_s \times Q_f) + (C_s \times AC \times Q_s) + (C_w \times CF_{rad} \times Q_{sw})]$$

$$C_{forage} = (C_s \times R_{upp}) + (C_s \times R_{es})$$

Parameter	Units	Value used	References ^b
Chemical concentration in milk = C_{milk}	mg/kg or pCi/g	Chemical-specific	Calculated
Forage-milk transfer factor = F_{milk}	day/kg	Chemical-specific	-----
Chemical concentration in pasture = C_{forage}	mg/kg or pCi/g	Chemical-specific	Calculated
Area of contact ^c = AC	unitless	AS/AD	-----
Area of SWMU = AS	acres	SWMU-specific	-----
Area of dairy range = AD	acres	2	[29]
Fraction of dairy's food from site when on site = f_s	unitless	1.0	[5]
Quantity of pasture ingested daily by dairy = Q_f	kg/day	25	[25]
Chemical concentration in soil or sediment = C_s	mg/kg or pCi/g	Chemical-specific	-----
Quantity of soil ingested daily by dairy = Q_s	kg/day	1	[26]
Contaminant concentration in water = C_w	mg/L or pCi/L	Chemical-specific	-----
Conversion factor for radionuclides = CF_{rad}	kg/g	10^{-3}	-----
Quantity of water ingested daily by dairy = Q_w	L/day	60	[25]
Soil to plant uptake (dry) = R_{upp}	unitless	Chemical-specific or $38 \times K_{ow}^{-0.58}$	[8]
Soil resuspension multiplier = R_{es}	unitless	0.25	[3]

^a Equations after [1], [2], [3], [4].

^b All references follow Table D.50.

^c AC cannot be greater than 1.

^d All ingested water is considered to be from SWMU or SWMU area.

Note: The values that were used to determine input parameters are highlighted.

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Appendix B: RESRAD Summary Reports

APPENDIX B: RESRAD SUMMARY REPORTS

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Resident Farmer

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 1 mrem/yr.

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Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

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Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2 (1)
B-1	Am-241	3.550E-01	3.552E-01	DCF2 (2)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2 (3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2 (4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2 (5)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2 (6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2 (7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2 (9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2 (10)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2 (12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2 (14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2 (15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2 (17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2 (18)
B-1	U-233	3.550E-02	3.552E-02	DCF2 (19)
B-1	U-234	3.480E-02	3.478E-02	DCF2 (20)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2 (21)
B-1	U-236	3.220E-02	3.219E-02	DCF2 (22)
B-1	U-238	2.960E-02	2.960E-02	DCF2 (23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3 (5)
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3 (6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3 (7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3 (9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3 (10)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (12)
D-1	Ra-228+D	2.552E-03	2.553E-03	DCF3 (13)
D-1	Tc-99	2.370E-06	2.368E-06	DCF3 (14)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.302E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.266E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.890E-04	1.887E-04	DCF3(19)
D-1	U-234	1.810E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(21)
D-1	U-236	1.740E-04	1.739E-04	DCF3(22)
D-1	U-238	1.670E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)
D-5				

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Resident Farmer Deterministic Run

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Am-241	1.000E+00
Thickness:	0.15 meters	Cs-137	1.000E+00
Cover Depth:	0.00 meters	Np-237	1.000E+00
		Pu-238	1.000E+00
		Pu-239	1.000E+00
		Pu-240	1.000E+00
		Tc-99	1.000E+00
		Th-228	1.000E+00
		Th-230	1.000E+00
		Th-232	1.000E+00
		U-234	1.000E+00
		U-235	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.114E+01	1.044E+01	1.740E+01	1.691E+01	1.735E+01	1.818E+01
M(t):	1.114E+01	1.044E+01	1.740E+01	1.691E+01	1.735E+01	1.818E+01

Maximum TDOSE(t): 1.818E+01 mrem/yr at t = 1.000E+03 years

Summary : Wildlife Area Resident Farmer Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.015E-02	0.0027	1.278E-04	0.0000	0.000E+00	0.0000	1.558E-02	0.0014	5.717E-03	0.0005	6.311E-04	0.0001	2.591E-02	0.0023
Cs-137	2.274E+00	0.2041	5.129E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0036	2.563E-01	0.0230	1.886E-01	0.0169	1.666E-03	0.0001
Np-237	7.719E-01	0.0693	6.662E-05	0.0000	0.000E+00	0.0000	1.722E-01	0.0155	6.839E-02	0.0061	9.437E-04	0.0001	1.436E-02	0.0013
Pu-238	9.534E-05	0.0000	1.461E-04	0.0000	0.000E+00	0.0000	1.786E-02	0.0016	1.311E-02	0.0012	3.618E-04	0.0000	2.970E-02	0.0027
Pu-239	2.054E-04	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Pu-240	9.266E-05	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Tc-99	7.626E-05	0.0000	1.507E-08	0.0000	0.000E+00	0.0000	2.182E-01	0.0196	7.221E-04	0.0001	1.968E-02	0.0018	7.220E-05	0.0000
Th-228	5.334E+00	0.4787	4.879E-05	0.0000	0.000E+00	0.0000	9.371E-03	0.0008	6.878E-03	0.0006	9.491E-04	0.0001	1.558E-02	0.0014
Th-230	2.431E-03	0.0002	1.333E-04	0.0000	0.000E+00	0.0000	1.655E-02	0.0015	1.205E-02	0.0011	1.768E-03	0.0002	2.723E-02	0.0024
Th-232	2.703E-01	0.0243	1.483E-04	0.0000	0.000E+00	0.0000	1.348E-01	0.0121	3.670E-02	0.0033	7.254E-02	0.0065	3.512E-02	0.0032
U-234	2.774E-04	0.0000	1.253E-05	0.0000	0.000E+00	0.0000	9.508E-03	0.0009	9.569E-03	0.0009	4.660E-02	0.0042	6.337E-03	0.0006
U-235	5.381E-01	0.0483	1.134E-05	0.0000	0.000E+00	0.0000	9.212E-03	0.0008	9.286E-03	0.0008	4.512E-02	0.0040	6.137E-03	0.0006
U-238	1.139E-01	0.0102	1.067E-05	0.0000	0.000E+00	0.0000	9.434E-03	0.0008	9.495E-03	0.0009	4.624E-02	0.0041	6.288E-03	0.0006
Total	9.336E+00	0.8378	1.025E-03	0.0001	0.000E+00	0.0000	6.916E-01	0.0621	4.568E-01	0.0410	4.242E-01	0.0381	2.332E-01	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.811E-02	0.0070
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.2478
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.028E+00	0.0922
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.127E-02	0.0055
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.696E-02	0.0060
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.685E-02	0.0060
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.387E-01	0.0214
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.367E+00	0.4817
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.017E-02	0.0054
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.496E-01	0.0493
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.230E-02	0.0065
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.0545
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-01	0.0166
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.114E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.010E-02	0.0029	1.276E-04	0.0000	0.000E+00	0.0000	1.555E-02	0.0015	5.708E-03	0.0005	6.301E-04	0.0001	2.586E-02	0.0025
Cs-137	2.221E+00	0.2127	5.009E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0037	2.503E-01	0.0240	1.842E-01	0.0176	1.627E-03	0.0002
Np-237	7.706E-01	0.0738	6.650E-05	0.0000	0.000E+00	0.0000	1.719E-01	0.0165	6.828E-02	0.0065	9.424E-04	0.0001	1.434E-02	0.0014
Pu-238	9.457E-05	0.0000	1.449E-04	0.0000	0.000E+00	0.0000	1.771E-02	0.0017	1.300E-02	0.0012	3.590E-04	0.0000	2.946E-02	0.0028
Pu-239	2.054E-04	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Pu-240	9.263E-05	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Tc-99	5.725E-05	0.0000	1.131E-08	0.0000	0.000E+00	0.0000	1.641E-01	0.0157	5.464E-04	0.0001	1.486E-02	0.0014	5.420E-05	0.0000
Th-228	3.713E+00	0.3555	3.396E-05	0.0000	0.000E+00	0.0000	6.523E-03	0.0006	4.787E-03	0.0005	6.606E-04	0.0001	1.085E-02	0.0010
Th-230	5.576E-03	0.0005	1.333E-04	0.0000	0.000E+00	0.0000	1.695E-02	0.0016	1.215E-02	0.0012	2.003E-03	0.0002	2.725E-02	0.0026
Th-232	9.039E-01	0.0865	1.525E-04	0.0000	0.000E+00	0.0000	3.638E-01	0.0348	8.566E-02	0.0082	2.075E-01	0.0199	4.530E-02	0.0043
U-234	2.769E-04	0.0000	1.251E-05	0.0000	0.000E+00	0.0000	9.491E-03	0.0009	9.552E-03	0.0009	4.652E-02	0.0045	6.326E-03	0.0006
U-235	5.371E-01	0.0514	1.133E-05	0.0000	0.000E+00	0.0000	9.207E-03	0.0009	9.314E-03	0.0009	4.504E-02	0.0043	6.128E-03	0.0006
U-238	1.137E-01	0.0109	1.065E-05	0.0000	0.000E+00	0.0000	9.418E-03	0.0009	9.479E-03	0.0009	4.616E-02	0.0044	6.277E-03	0.0006
Total	8.296E+00	0.7943	1.013E-03	0.0001	0.000E+00	0.0000	8.626E-01	0.0826	4.974E-01	0.0476	5.497E-01	0.0526	2.383E-01	0.0228

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.798E-02	0.0075
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.2582
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E+00	0.0982
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.077E-02	0.0058
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.694E-02	0.0064
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.682E-02	0.0064
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E-01	0.0172
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E+00	0.3577
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.406E-02	0.0061
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.606E+00	0.1538
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.218E-02	0.0069
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.0581
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.851E-01	0.0177
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.044E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.775E-02	0.0016	1.176E-04	0.0000	0.000E+00	0.0000	1.434E-02	0.0008	5.262E-03	0.0003	5.807E-04	0.0000	2.384E-02	0.0014
Cs-137	7.015E-01	0.0403	1.582E-08	0.0000	0.000E+00	0.0000	1.232E-02	0.0007	7.904E-02	0.0045	5.817E-02	0.0033	5.138E-04	0.0000
Np-237	7.101E-01	0.0408	6.128E-05	0.0000	0.000E+00	0.0000	1.584E-01	0.0091	6.292E-02	0.0036	8.779E-04	0.0001	1.321E-02	0.0008
Pu-238	6.358E-05	0.0000	9.736E-05	0.0000	0.000E+00	0.0000	1.190E-02	0.0007	8.738E-03	0.0005	2.463E-04	0.0000	1.980E-02	0.0011
Pu-239	2.030E-04	0.0000	1.581E-04	0.0000	0.000E+00	0.0000	1.925E-02	0.0011	1.413E-02	0.0008	3.900E-04	0.0000	3.202E-02	0.0018
Pu-240	9.119E-05	0.0000	1.574E-04	0.0000	0.000E+00	0.0000	1.918E-02	0.0011	1.408E-02	0.0008	3.885E-04	0.0000	3.189E-02	0.0018
Tc-99	4.512E-11	0.0000	8.916E-15	0.0000	0.000E+00	0.0000	1.293E-07	0.0000	4.307E-10	0.0000	1.171E-08	0.0000	4.272E-11	0.0000
Th-228	7.222E-08	0.0000	6.607E-13	0.0000	0.000E+00	0.0000	1.269E-10	0.0000	9.312E-11	0.0000	1.285E-11	0.0000	2.110E-10	0.0000
Th-230	1.570E-01	0.0090	1.334E-04	0.0000	0.000E+00	0.0000	5.085E-02	0.0029	2.557E-02	0.0015	2.264E-02	0.0013	3.055E-02	0.0018
Th-232	1.024E+01	0.5888	2.254E-04	0.0000	0.000E+00	0.0000	2.157E+00	0.1240	4.752E-01	0.0273	1.258E+00	0.0723	1.371E-01	0.0079
U-234	2.891E-04	0.0000	1.154E-05	0.0000	0.000E+00	0.0000	8.724E-03	0.0005	8.774E-03	0.0005	4.269E-02	0.0025	5.818E-03	0.0003
U-235	4.939E-01	0.0284	1.097E-05	0.0000	0.000E+00	0.0000	9.119E-03	0.0005	1.065E-02	0.0006	4.137E-02	0.0024	5.796E-03	0.0003
U-238	1.044E-01	0.0060	9.776E-06	0.0000	0.000E+00	0.0000	8.646E-03	0.0005	8.701E-03	0.0005	4.237E-02	0.0024	5.762E-03	0.0003
Total	1.244E+01	0.7150	9.829E-04	0.0001	0.000E+00	0.0000	2.470E+00	0.1420	7.130E-01	0.0410	1.468E+00	0.0844	3.063E-01	0.0176

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.188E-02	0.0041
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.516E-01	0.0490
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.455E-01	0.0544
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.085E-02	0.0023
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.616E-02	0.0038
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.579E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.415E-07	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.267E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.868E-01	0.0165
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.427E+01	0.8203
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.631E-02	0.0038
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.608E-01	0.0322
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.699E-01	0.0098
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.554E-02	0.0015	1.082E-04	0.0000	0.000E+00	0.0000	1.319E-02	0.0008	4.842E-03	0.0003	5.343E-04	0.0000	2.193E-02	0.0013
Cs-137	2.164E-01	0.0128	4.880E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0002	2.438E-02	0.0014	1.794E-02	0.0011	1.585E-04	0.0000
Np-237	6.532E-01	0.0386	5.638E-05	0.0000	0.000E+00	0.0000	1.457E-01	0.0086	5.788E-02	0.0034	8.166E-04	0.0000	1.216E-02	0.0007
Pu-238	4.242E-05	0.0000	6.490E-05	0.0000	0.000E+00	0.0000	7.936E-03	0.0005	5.825E-03	0.0003	1.689E-04	0.0000	1.320E-02	0.0008
Pu-239	2.005E-04	0.0000	1.562E-04	0.0000	0.000E+00	0.0000	1.902E-02	0.0011	1.396E-02	0.0008	3.853E-04	0.0000	3.163E-02	0.0019
Pu-240	8.975E-05	0.0000	1.549E-04	0.0000	0.000E+00	0.0000	1.888E-02	0.0011	1.385E-02	0.0008	3.824E-04	0.0000	3.139E-02	0.0019
Tc-99	2.670E-17	0.0000	5.275E-21	0.0000	0.000E+00	0.0000	7.651E-14	0.0000	2.548E-16	0.0000	6.928E-15	0.0000	2.527E-17	0.0000
Th-228	9.779E-16	0.0000	8.945E-21	0.0000	0.000E+00	0.0000	1.718E-18	0.0000	1.261E-18	0.0000	1.740E-19	0.0000	2.857E-18	0.0000
Th-230	3.063E-01	0.0181	1.336E-04	0.0000	0.000E+00	0.0000	9.600E-02	0.0057	4.599E-02	0.0027	5.040E-02	0.0030	3.577E-02	0.0021
Th-232	1.026E+01	0.6065	2.252E-04	0.0000	0.000E+00	0.0000	2.158E+00	0.1276	4.754E-01	0.0281	1.259E+00	0.0744	1.371E-01	0.0081
U-234	3.654E-04	0.0000	1.063E-05	0.0000	0.000E+00	0.0000	8.024E-03	0.0005	8.054E-03	0.0005	3.913E-02	0.0023	5.344E-03	0.0003
U-235	4.539E-01	0.0268	1.092E-05	0.0000	0.000E+00	0.0000	9.116E-03	0.0005	1.187E-02	0.0007	3.794E-02	0.0022	5.543E-03	0.0003
U-238	9.564E-02	0.0057	8.959E-06	0.0000	0.000E+00	0.0000	7.923E-03	0.0005	7.974E-03	0.0005	3.883E-02	0.0023	5.280E-03	0.0003
Total	1.201E+01	0.7100	9.300E-04	0.0001	0.000E+00	0.0000	2.487E+00	0.1471	6.700E-01	0.0396	1.445E+00	0.0855	2.995E-01	0.0177

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.615E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.0155
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.698E-01	0.0514
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.723E-02	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.536E-02	0.0039
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.475E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.374E-14	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.839E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.346E-01	0.0316
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.428E+01	0.8447
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.093E-02	0.0036
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.0307
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-01	0.0092
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.691E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.316E-02	0.0008	5.559E-05	0.0000	0.000E+00	0.0000	6.787E-03	0.0004	2.491E-03	0.0001	2.745E-04	0.0000	1.127E-02	0.0006
Cs-137	1.774E-05	0.0000	3.999E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
Np-237	3.350E-01	0.0193	2.893E-05	0.0000	0.000E+00	0.0000	7.473E-02	0.0043	2.969E-02	0.0017	4.549E-04	0.0000	6.241E-03	0.0004
Pu-238	2.254E-06	0.0000	2.531E-06	0.0000	0.000E+00	0.0000	3.110E-04	0.0000	2.287E-04	0.0000	1.465E-05	0.0000	5.152E-04	0.0000
Pu-239	1.822E-04	0.0000	1.418E-04	0.0000	0.000E+00	0.0000	1.727E-02	0.0010	1.267E-02	0.0007	3.498E-04	0.0000	2.872E-02	0.0017
Pu-240	7.900E-05	0.0000	1.364E-04	0.0000	0.000E+00	0.0000	1.661E-02	0.0010	1.219E-02	0.0007	3.369E-04	0.0000	2.763E-02	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.325E+00	0.0764	1.349E-04	0.0000	0.000E+00	0.0000	4.258E-01	0.0245	1.986E-01	0.0114	2.536E-01	0.0146	7.491E-02	0.0043
Th-232	1.011E+01	0.5825	2.220E-04	0.0000	0.000E+00	0.0000	2.126E+00	0.1226	4.685E-01	0.0270	1.240E+00	0.0715	1.351E-01	0.0078
U-234	2.508E-03	0.0001	5.621E-06	0.0000	0.000E+00	0.0000	4.726E-03	0.0003	4.345E-03	0.0003	1.985E-02	0.0011	2.803E-03	0.0002
U-235	2.342E-01	0.0135	1.075E-05	0.0000	0.000E+00	0.0000	8.975E-03	0.0005	1.792E-02	0.0010	1.910E-02	0.0011	4.156E-03	0.0002
U-238	4.751E-02	0.0027	4.456E-06	0.0000	0.000E+00	0.0000	3.941E-03	0.0002	3.966E-03	0.0002	1.931E-02	0.0011	2.626E-03	0.0002
Total	1.206E+01	0.6954	7.429E-04	0.0000	0.000E+00	0.0000	2.686E+00	0.1548	7.505E-01	0.0433	1.554E+00	0.0896	2.940E-01	0.0169

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.404E-02	0.0020
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.461E-01	0.0257
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-03	0.0001
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.933E-02	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.699E-02	0.0033
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.278E+00	0.1313
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.408E+01	0.8114
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.424E-02	0.0020
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E-01	0.0164
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.736E-02	0.0045
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.748E-03	0.0003	2.418E-05	0.0000	0.000E+00	0.0000	2.957E-03	0.0002	1.085E-03	0.0001	1.194E-04	0.0000	4.900E-03	0.0003
Cs-137	1.383E-10	0.0000	3.119E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
Np-237	1.454E-01	0.0080	1.258E-05	0.0000	0.000E+00	0.0000	3.243E-02	0.0018	1.289E-02	0.0007	2.165E-04	0.0000	2.715E-03	0.0001
Pu-238	1.996E-06	0.0000	4.492E-08	0.0000	0.000E+00	0.0000	6.711E-06	0.0000	4.957E-06	0.0000	4.078E-06	0.0000	9.495E-06	0.0000
Pu-239	1.615E-04	0.0000	1.256E-04	0.0000	0.000E+00	0.0000	1.530E-02	0.0008	1.123E-02	0.0006	3.100E-04	0.0000	2.545E-02	0.0014
Pu-240	6.735E-05	0.0000	1.163E-04	0.0000	0.000E+00	0.0000	1.416E-02	0.0008	1.040E-02	0.0006	2.874E-04	0.0000	2.355E-02	0.0013
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.242E+00	0.1233	1.353E-04	0.0000	0.000E+00	0.0000	7.237E-01	0.0398	3.364E-01	0.0185	4.372E-01	0.0240	1.101E-01	0.0061
Th-232	9.923E+00	0.5457	2.179E-04	0.0000	0.000E+00	0.0000	2.088E+00	0.1148	4.600E-01	0.0253	1.218E+00	0.0670	1.327E-01	0.0073
U-234	6.675E-03	0.0004	2.746E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0002	2.654E-03	0.0001	9.360E-03	0.0005	1.456E-03	0.0001
U-235	1.067E-01	0.0059	1.004E-05	0.0000	0.000E+00	0.0000	8.369E-03	0.0005	1.997E-02	0.0011	8.224E-03	0.0005	3.193E-03	0.0002
U-238	1.982E-02	0.0011	1.862E-06	0.0000	0.000E+00	0.0000	1.647E-03	0.0001	1.657E-03	0.0001	8.066E-03	0.0004	1.097E-03	0.0001
Total	1.245E+01	0.6847	6.465E-04	0.0000	0.000E+00	0.0000	2.890E+00	0.1589	8.563E-01	0.0471	1.682E+00	0.0925	3.052E-01	0.0168

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.483E-02	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-01	0.0107
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.728E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.258E-02	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.859E-02	0.0027
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.850E+00	0.2117
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E+01	0.7601
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-02	0.0013
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.0081
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.229E-02	0.0018
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.818E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Am-241	Np-237+D	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Am-241	U-233	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
Am-241	Th-229+D	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Am-241	ΣDSR(j)		7.811E-02	7.798E-02	7.188E-02	6.615E-02	3.404E-02	1.483E-02
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Np-237+D	Np-237+D	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237+D	U-233	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
Np-237+D	Th-229+D	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Np-237+D	ΣDSR(j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.937E-01
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	U-234	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
Pu-238	Th-230	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Pu-238	Ra-226+D	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Pu-238	Pb-210+D	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pu-238	ΣDSR(j)		6.127E-02	6.077E-02	4.085E-02	2.723E-02	1.074E-03	2.728E-05
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-239	U-235+D	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
Pu-239	Pa-231	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pu-239	Ac-227+D	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Pu-239	ΣDSR(j)		6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	U-236	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Pu-240	Th-232	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Pu-240	Ra-228+D	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Pu-240	Th-228+D	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Pu-240	ΣDSR(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	Ra-226+D	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Th-230	Pb-210+D	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Th-230	ΣDSR(j)		6.017E-02	6.406E-02	2.868E-01	5.346E-01	2.278E+00	3.850E+00

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	Ra-228+D	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-232	Th-228+D	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-232	∑DSR(j)		5.496E-01	1.606E+00	1.427E+01	1.428E+01	1.408E+01	1.382E+01
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
U-234	Pb-210+D	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
U-234	∑DSR(j)		7.230E-02	7.218E-02	6.631E-02	6.093E-02	3.424E-02	2.393E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.844E-01	1.465E-01
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238+D	U-238+D	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238+D	U-234	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
U-238+D	Pb-210+D	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
U-238+D	∑DSR(j)		1.854E-01	1.851E-01	1.699E-01	1.557E-01	7.736E-02	3.229E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	1.280E+01	1.282E+01	1.391E+01	1.512E+01	2.938E+01	6.741E+01
Cs-137	3.622E-01	3.708E-01	1.174E+00	3.807E+00	4.645E+04	5.956E+09
Np-237	9.729E-01	9.745E-01	1.058E+00	1.150E+00	2.242E+00	5.163E+00
Pu-238	1.632E+01	1.645E+01	2.448E+01	3.672E+01	9.308E+02	3.665E+04
Pu-239	1.493E+01	1.494E+01	1.512E+01	1.530E+01	1.685E+01	1.902E+01
Pu-240	1.496E+01	1.496E+01	1.520E+01	1.544E+01	1.755E+01	2.058E+01
Tc-99	4.189E+00	5.569E+00	7.065E+06	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	1.863E-01	2.677E-01	1.376E+07	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	1.662E+01	1.561E+01	3.487E+00	1.871E+00	4.390E-01	2.597E-01
Th-232	1.819E+00	6.225E-01	7.007E-02	7.001E-02	7.104E-02	7.235E-02
U-234	1.383E+01	1.386E+01	1.508E+01	1.641E+01	2.921E+01	4.179E+01
U-235	1.645E+00	1.648E+00	1.783E+00	1.929E+00	3.517E+00	6.825E+00
U-238	5.394E+00	5.404E+00	5.887E+00	6.424E+00	1.293E+01	3.097E+01

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	7.811E-02	1.280E+01	1.483E-02	6.741E+01
Cs-137	1.000E+00	0.000E+00	2.761E+00	3.622E-01	1.679E-10	5.956E+09
Np-237	1.000E+00	0.000E+00	1.028E+00	9.729E-01	1.937E-01	5.163E+00
Pu-238	1.000E+00	0.000E+00	6.127E-02	1.632E+01	2.728E-05	3.665E+04
Pu-239	1.000E+00	0.000E+00	6.696E-02	1.493E+01	5.258E-02	1.902E+01
Pu-240	1.000E+00	0.000E+00	6.685E-02	1.496E+01	4.859E-02	2.058E+01
Tc-99	1.000E+00	0.000E+00	2.387E-01	4.189E+00	0.000E+00	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.367E+00	1.863E-01	0.000E+00	*8.195E+14
Th-230	1.000E+00	1.000E+03	3.850E+00	2.597E-01	3.850E+00	2.597E-01
Th-232	1.000E+00	68.3 ± 0.1	1.430E+01	6.995E-02	1.382E+01	7.235E-02
U-234	1.000E+00	0.000E+00	7.230E-02	1.383E+01	2.393E-02	4.179E+01
U-235	1.000E+00	0.000E+00	6.078E-01	1.645E+00	1.465E-01	6.825E+00
U-238	1.000E+00	0.000E+00	1.854E-01	5.394E+00	3.229E-02	3.097E+01

*At specific activity limit

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Np-237	Am-241	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Np-237	Np-237	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237	ΣDOSE (j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.936E-01
U-233	Am-241	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
U-233	Np-237	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
U-233	ΣDOSE (j)		1.816E-07	5.165E-07	1.546E-05	2.824E-05	7.089E-05	6.023E-05
Th-229	Am-241	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Th-229	Np-237	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Th-229	ΣDOSE (j)		8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.693E-05	8.629E-05
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	ΣDOSE (j)		6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
U-234	Pu-238	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	U-238	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-234	ΣDOSE (j)		7.230E-02	7.218E-02	6.625E-02	6.071E-02	3.017E-02	1.258E-02
Th-230	Pu-238	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	ΣDOSE (j)		5.826E-02	5.826E-02	5.815E-02	5.805E-02	5.712E-02	5.590E-02
Ra-226	Pu-238	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Ra-226	Th-230	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Ra-226	U-234	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
Ra-226	U-238	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
Ra-226	ΣDOSE (j)		1.903E-03	5.744E-03	1.908E-01	3.732E-01	1.620E+00	2.746E+00
Pb-210	Pu-238	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pb-210	Th-230	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Pb-210	U-234	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
Pb-210	U-238	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
Pb-210	ΣDOSE (j)		9.109E-06	5.881E-05	3.788E-02	1.036E-01	6.051E-01	1.060E+00
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
U-235	Pu-239	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235	ΣDOSE (j)		6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pu-231	Pu-239	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pu-231	U-235	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Pu-231	ΣDOSE(j)		2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Ac-227	Pu-239	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Ac-227	ΣDOSE(j)		2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	ΣDOSE(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
U-236	Pu-240	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Th-232	Pu-240	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	ΣDOSE(j)		6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Ra-228	Pu-240	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Ra-228	Th-232	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Ra-228	ΣDOSE(j)		4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-228	Pu-240	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Th-228	Th-228	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-228	ΣDOSE(j)		5.409E+00	3.991E+00	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238	U-238	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238	ΣDOSE(j)		1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-1 MREM.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Resident Farmer Deterministic Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 2.64 seconds

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Resident Farmer

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 15 mrem/yr.

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Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2 (1)
B-1	Am-241	3.550E-01	3.552E-01	DCF2 (2)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2 (3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2 (4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2 (5)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2 (6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2 (7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2 (9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2 (10)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2 (12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2 (14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2 (15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2 (17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2 (18)
B-1	U-233	3.550E-02	3.552E-02	DCF2 (19)
B-1	U-234	3.480E-02	3.478E-02	DCF2 (20)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2 (21)
B-1	U-236	3.220E-02	3.219E-02	DCF2 (22)
B-1	U-238	2.960E-02	2.960E-02	DCF2 (23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3 (5)
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3 (6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3 (7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3 (9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3 (10)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (12)
D-1	Ra-228+D	2.552E-03	2.553E-03	DCF3 (13)
D-1	Tc-99	2.370E-06	2.368E-06	DCF3 (14)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.302E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.266E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.890E-04	1.887E-04	DCF3(19)
D-1	U-234	1.810E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(21)
D-1	U-236	1.740E-04	1.739E-04	DCF3(22)
D-1	U-238	1.670E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Am-241	1.000E+00
Thickness:	0.15 meters	Cs-137	1.000E+00
Cover Depth:	0.00 meters	Np-237	1.000E+00
		Pu-238	1.000E+00
		Pu-239	1.000E+00
		Pu-240	1.000E+00
		Tc-99	1.000E+00
		Th-228	1.000E+00
		Th-230	1.000E+00
		Th-232	1.000E+00
		U-234	1.000E+00
		U-235	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.114E+01	1.044E+01	1.740E+01	1.691E+01	1.735E+01	1.818E+01
M(t):	7.429E-01	6.963E-01	1.160E+00	1.127E+00	1.157E+00	1.212E+00

Maximum TDOSE(t): 1.818E+01 mrem/yr at t = 1.000E+03 years

Summary : Wildlife Area Resident Farmer Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.015E-02	0.0027	1.278E-04	0.0000	0.000E+00	0.0000	1.558E-02	0.0014	5.717E-03	0.0005	6.311E-04	0.0001	2.591E-02	0.0023
Cs-137	2.274E+00	0.2041	5.129E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0036	2.563E-01	0.0230	1.886E-01	0.0169	1.666E-03	0.0001
Np-237	7.719E-01	0.0693	6.662E-05	0.0000	0.000E+00	0.0000	1.722E-01	0.0155	6.839E-02	0.0061	9.437E-04	0.0001	1.436E-02	0.0013
Pu-238	9.534E-05	0.0000	1.461E-04	0.0000	0.000E+00	0.0000	1.786E-02	0.0016	1.311E-02	0.0012	3.618E-04	0.0000	2.970E-02	0.0027
Pu-239	2.054E-04	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Pu-240	9.266E-05	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Tc-99	7.626E-05	0.0000	1.507E-08	0.0000	0.000E+00	0.0000	2.182E-01	0.0196	7.221E-04	0.0001	1.968E-02	0.0018	7.220E-05	0.0000
Th-228	5.334E+00	0.4787	4.879E-05	0.0000	0.000E+00	0.0000	9.371E-03	0.0008	6.878E-03	0.0006	9.491E-04	0.0001	1.558E-02	0.0014
Th-230	2.431E-03	0.0002	1.333E-04	0.0000	0.000E+00	0.0000	1.655E-02	0.0015	1.205E-02	0.0011	1.768E-03	0.0002	2.723E-02	0.0024
Th-232	2.703E-01	0.0243	1.483E-04	0.0000	0.000E+00	0.0000	1.348E-01	0.0121	3.670E-02	0.0033	7.254E-02	0.0065	3.512E-02	0.0032
U-234	2.774E-04	0.0000	1.253E-05	0.0000	0.000E+00	0.0000	9.508E-03	0.0009	9.569E-03	0.0009	4.660E-02	0.0042	6.337E-03	0.0006
U-235	5.381E-01	0.0483	1.134E-05	0.0000	0.000E+00	0.0000	9.212E-03	0.0008	9.286E-03	0.0008	4.512E-02	0.0040	6.137E-03	0.0006
U-238	1.139E-01	0.0102	1.067E-05	0.0000	0.000E+00	0.0000	9.434E-03	0.0008	9.495E-03	0.0009	4.624E-02	0.0041	6.288E-03	0.0006
Total	9.336E+00	0.8378	1.025E-03	0.0001	0.000E+00	0.0000	6.916E-01	0.0621	4.568E-01	0.0410	4.242E-01	0.0381	2.332E-01	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.811E-02	0.0070
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.2478
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.028E+00	0.0922
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.127E-02	0.0055
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.696E-02	0.0060
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.685E-02	0.0060
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.387E-01	0.0214
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.367E+00	0.4817
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.017E-02	0.0054
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.496E-01	0.0493
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.230E-02	0.0065
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.0545
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-01	0.0166
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.114E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.010E-02	0.0029	1.276E-04	0.0000	0.000E+00	0.0000	1.555E-02	0.0015	5.708E-03	0.0005	6.301E-04	0.0001	2.586E-02	0.0025
Cs-137	2.221E+00	0.2127	5.009E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0037	2.503E-01	0.0240	1.842E-01	0.0176	1.627E-03	0.0002
Np-237	7.706E-01	0.0738	6.650E-05	0.0000	0.000E+00	0.0000	1.719E-01	0.0165	6.828E-02	0.0065	9.424E-04	0.0001	1.434E-02	0.0014
Pu-238	9.457E-05	0.0000	1.449E-04	0.0000	0.000E+00	0.0000	1.771E-02	0.0017	1.300E-02	0.0012	3.590E-04	0.0000	2.946E-02	0.0028
Pu-239	2.054E-04	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Pu-240	9.263E-05	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Tc-99	5.725E-05	0.0000	1.131E-08	0.0000	0.000E+00	0.0000	1.641E-01	0.0157	5.464E-04	0.0001	1.486E-02	0.0014	5.420E-05	0.0000
Th-228	3.713E+00	0.3555	3.396E-05	0.0000	0.000E+00	0.0000	6.523E-03	0.0006	4.787E-03	0.0005	6.606E-04	0.0001	1.085E-02	0.0010
Th-230	5.576E-03	0.0005	1.333E-04	0.0000	0.000E+00	0.0000	1.695E-02	0.0016	1.215E-02	0.0012	2.003E-03	0.0002	2.725E-02	0.0026
Th-232	9.039E-01	0.0865	1.525E-04	0.0000	0.000E+00	0.0000	3.638E-01	0.0348	8.566E-02	0.0082	2.075E-01	0.0199	4.530E-02	0.0043
U-234	2.769E-04	0.0000	1.251E-05	0.0000	0.000E+00	0.0000	9.491E-03	0.0009	9.552E-03	0.0009	4.652E-02	0.0045	6.326E-03	0.0006
U-235	5.371E-01	0.0514	1.133E-05	0.0000	0.000E+00	0.0000	9.207E-03	0.0009	9.314E-03	0.0009	4.504E-02	0.0043	6.128E-03	0.0006
U-238	1.137E-01	0.0109	1.065E-05	0.0000	0.000E+00	0.0000	9.418E-03	0.0009	9.479E-03	0.0009	4.616E-02	0.0044	6.277E-03	0.0006
Total	8.296E+00	0.7943	1.013E-03	0.0001	0.000E+00	0.0000	8.626E-01	0.0826	4.974E-01	0.0476	5.497E-01	0.0526	2.383E-01	0.0228

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.798E-02	0.0075
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.2582
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E+00	0.0982
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.077E-02	0.0058
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.694E-02	0.0064
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.682E-02	0.0064
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E-01	0.0172
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E+00	0.3577
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.406E-02	0.0061
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.606E+00	0.1538
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.218E-02	0.0069
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.0581
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.851E-01	0.0177
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.044E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.775E-02	0.0016	1.176E-04	0.0000	0.000E+00	0.0000	1.434E-02	0.0008	5.262E-03	0.0003	5.807E-04	0.0000	2.384E-02	0.0014
Cs-137	7.015E-01	0.0403	1.582E-08	0.0000	0.000E+00	0.0000	1.232E-02	0.0007	7.904E-02	0.0045	5.817E-02	0.0033	5.138E-04	0.0000
Np-237	7.101E-01	0.0408	6.128E-05	0.0000	0.000E+00	0.0000	1.584E-01	0.0091	6.292E-02	0.0036	8.779E-04	0.0001	1.321E-02	0.0008
Pu-238	6.358E-05	0.0000	9.736E-05	0.0000	0.000E+00	0.0000	1.190E-02	0.0007	8.738E-03	0.0005	2.463E-04	0.0000	1.980E-02	0.0011
Pu-239	2.030E-04	0.0000	1.581E-04	0.0000	0.000E+00	0.0000	1.925E-02	0.0011	1.413E-02	0.0008	3.900E-04	0.0000	3.202E-02	0.0018
Pu-240	9.119E-05	0.0000	1.574E-04	0.0000	0.000E+00	0.0000	1.918E-02	0.0011	1.408E-02	0.0008	3.885E-04	0.0000	3.189E-02	0.0018
Tc-99	4.512E-11	0.0000	8.916E-15	0.0000	0.000E+00	0.0000	1.293E-07	0.0000	4.307E-10	0.0000	1.171E-08	0.0000	4.272E-11	0.0000
Th-228	7.222E-08	0.0000	6.607E-13	0.0000	0.000E+00	0.0000	1.269E-10	0.0000	9.312E-11	0.0000	1.285E-11	0.0000	2.110E-10	0.0000
Th-230	1.570E-01	0.0090	1.334E-04	0.0000	0.000E+00	0.0000	5.085E-02	0.0029	2.557E-02	0.0015	2.264E-02	0.0013	3.055E-02	0.0018
Th-232	1.024E+01	0.5888	2.254E-04	0.0000	0.000E+00	0.0000	2.157E+00	0.1240	4.752E-01	0.0273	1.258E+00	0.0723	1.371E-01	0.0079
U-234	2.891E-04	0.0000	1.154E-05	0.0000	0.000E+00	0.0000	8.724E-03	0.0005	8.774E-03	0.0005	4.269E-02	0.0025	5.818E-03	0.0003
U-235	4.939E-01	0.0284	1.097E-05	0.0000	0.000E+00	0.0000	9.119E-03	0.0005	1.065E-02	0.0006	4.137E-02	0.0024	5.796E-03	0.0003
U-238	1.044E-01	0.0060	9.776E-06	0.0000	0.000E+00	0.0000	8.646E-03	0.0005	8.701E-03	0.0005	4.237E-02	0.0024	5.762E-03	0.0003
Total	1.244E+01	0.7150	9.829E-04	0.0001	0.000E+00	0.0000	2.470E+00	0.1420	7.130E-01	0.0410	1.468E+00	0.0844	3.063E-01	0.0176

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.188E-02	0.0041
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.516E-01	0.0490
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.455E-01	0.0544
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.085E-02	0.0023
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.616E-02	0.0038
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.579E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.415E-07	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.267E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.868E-01	0.0165
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.427E+01	0.8203
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.631E-02	0.0038
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.608E-01	0.0322
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.699E-01	0.0098
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.554E-02	0.0015	1.082E-04	0.0000	0.000E+00	0.0000	1.319E-02	0.0008	4.842E-03	0.0003	5.343E-04	0.0000	2.193E-02	0.0013
Cs-137	2.164E-01	0.0128	4.880E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0002	2.438E-02	0.0014	1.794E-02	0.0011	1.585E-04	0.0000
Np-237	6.532E-01	0.0386	5.638E-05	0.0000	0.000E+00	0.0000	1.457E-01	0.0086	5.788E-02	0.0034	8.166E-04	0.0000	1.216E-02	0.0007
Pu-238	4.242E-05	0.0000	6.490E-05	0.0000	0.000E+00	0.0000	7.936E-03	0.0005	5.825E-03	0.0003	1.689E-04	0.0000	1.320E-02	0.0008
Pu-239	2.005E-04	0.0000	1.562E-04	0.0000	0.000E+00	0.0000	1.902E-02	0.0011	1.396E-02	0.0008	3.853E-04	0.0000	3.163E-02	0.0019
Pu-240	8.975E-05	0.0000	1.549E-04	0.0000	0.000E+00	0.0000	1.888E-02	0.0011	1.385E-02	0.0008	3.824E-04	0.0000	3.139E-02	0.0019
Tc-99	2.670E-17	0.0000	5.275E-21	0.0000	0.000E+00	0.0000	7.651E-14	0.0000	2.548E-16	0.0000	6.928E-15	0.0000	2.527E-17	0.0000
Th-228	9.779E-16	0.0000	8.945E-21	0.0000	0.000E+00	0.0000	1.718E-18	0.0000	1.261E-18	0.0000	1.740E-19	0.0000	2.857E-18	0.0000
Th-230	3.063E-01	0.0181	1.336E-04	0.0000	0.000E+00	0.0000	9.600E-02	0.0057	4.599E-02	0.0027	5.040E-02	0.0030	3.577E-02	0.0021
Th-232	1.026E+01	0.6065	2.252E-04	0.0000	0.000E+00	0.0000	2.158E+00	0.1276	4.754E-01	0.0281	1.259E+00	0.0744	1.371E-01	0.0081
U-234	3.654E-04	0.0000	1.063E-05	0.0000	0.000E+00	0.0000	8.024E-03	0.0005	8.054E-03	0.0005	3.913E-02	0.0023	5.344E-03	0.0003
U-235	4.539E-01	0.0268	1.092E-05	0.0000	0.000E+00	0.0000	9.116E-03	0.0005	1.187E-02	0.0007	3.794E-02	0.0022	5.543E-03	0.0003
U-238	9.564E-02	0.0057	8.959E-06	0.0000	0.000E+00	0.0000	7.923E-03	0.0005	7.974E-03	0.0005	3.883E-02	0.0023	5.280E-03	0.0003
Total	1.201E+01	0.7100	9.300E-04	0.0001	0.000E+00	0.0000	2.487E+00	0.1471	6.700E-01	0.0396	1.445E+00	0.0855	2.995E-01	0.0177

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.615E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.0155
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.698E-01	0.0514
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.723E-02	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.536E-02	0.0039
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.475E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.374E-14	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.839E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.346E-01	0.0316
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.428E+01	0.8447
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.093E-02	0.0036
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.0307
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-01	0.0092
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.691E+01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.316E-02	0.0008	5.559E-05	0.0000	0.000E+00	0.0000	6.787E-03	0.0004	2.491E-03	0.0001	2.745E-04	0.0000	1.127E-02	0.0006
Cs-137	1.774E-05	0.0000	3.999E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
Np-237	3.350E-01	0.0193	2.893E-05	0.0000	0.000E+00	0.0000	7.473E-02	0.0043	2.969E-02	0.0017	4.549E-04	0.0000	6.241E-03	0.0004
Pu-238	2.254E-06	0.0000	2.531E-06	0.0000	0.000E+00	0.0000	3.110E-04	0.0000	2.287E-04	0.0000	1.465E-05	0.0000	5.152E-04	0.0000
Pu-239	1.822E-04	0.0000	1.418E-04	0.0000	0.000E+00	0.0000	1.727E-02	0.0010	1.267E-02	0.0007	3.498E-04	0.0000	2.872E-02	0.0017
Pu-240	7.900E-05	0.0000	1.364E-04	0.0000	0.000E+00	0.0000	1.661E-02	0.0010	1.219E-02	0.0007	3.369E-04	0.0000	2.763E-02	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.325E+00	0.0764	1.349E-04	0.0000	0.000E+00	0.0000	4.258E-01	0.0245	1.986E-01	0.0114	2.536E-01	0.0146	7.491E-02	0.0043
Th-232	1.011E+01	0.5825	2.220E-04	0.0000	0.000E+00	0.0000	2.126E+00	0.1226	4.685E-01	0.0270	1.240E+00	0.0715	1.351E-01	0.0078
U-234	2.508E-03	0.0001	5.621E-06	0.0000	0.000E+00	0.0000	4.726E-03	0.0003	4.345E-03	0.0003	1.985E-02	0.0011	2.803E-03	0.0002
U-235	2.342E-01	0.0135	1.075E-05	0.0000	0.000E+00	0.0000	8.975E-03	0.0005	1.792E-02	0.0010	1.910E-02	0.0011	4.156E-03	0.0002
U-238	4.751E-02	0.0027	4.456E-06	0.0000	0.000E+00	0.0000	3.941E-03	0.0002	3.966E-03	0.0002	1.931E-02	0.0011	2.626E-03	0.0002
Total	1.206E+01	0.6954	7.429E-04	0.0000	0.000E+00	0.0000	2.686E+00	0.1548	7.505E-01	0.0433	1.554E+00	0.0896	2.940E-01	0.0169

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.404E-02	0.0020
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.461E-01	0.0257
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-03	0.0001
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.933E-02	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.699E-02	0.0033
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.278E+00	0.1313
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.408E+01	0.8114
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.424E-02	0.0020
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E-01	0.0164
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.736E-02	0.0045
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.748E-03	0.0003	2.418E-05	0.0000	0.000E+00	0.0000	2.957E-03	0.0002	1.085E-03	0.0001	1.194E-04	0.0000	4.900E-03	0.0003
Cs-137	1.383E-10	0.0000	3.119E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
Np-237	1.454E-01	0.0080	1.258E-05	0.0000	0.000E+00	0.0000	3.243E-02	0.0018	1.289E-02	0.0007	2.165E-04	0.0000	2.715E-03	0.0001
Pu-238	1.996E-06	0.0000	4.492E-08	0.0000	0.000E+00	0.0000	6.711E-06	0.0000	4.957E-06	0.0000	4.078E-06	0.0000	9.495E-06	0.0000
Pu-239	1.615E-04	0.0000	1.256E-04	0.0000	0.000E+00	0.0000	1.530E-02	0.0008	1.123E-02	0.0006	3.100E-04	0.0000	2.545E-02	0.0014
Pu-240	6.735E-05	0.0000	1.163E-04	0.0000	0.000E+00	0.0000	1.416E-02	0.0008	1.040E-02	0.0006	2.874E-04	0.0000	2.355E-02	0.0013
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.242E+00	0.1233	1.353E-04	0.0000	0.000E+00	0.0000	7.237E-01	0.0398	3.364E-01	0.0185	4.372E-01	0.0240	1.101E-01	0.0061
Th-232	9.923E+00	0.5457	2.179E-04	0.0000	0.000E+00	0.0000	2.088E+00	0.1148	4.600E-01	0.0253	1.218E+00	0.0670	1.327E-01	0.0073
U-234	6.675E-03	0.0004	2.746E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0002	2.654E-03	0.0001	9.360E-03	0.0005	1.456E-03	0.0001
U-235	1.067E-01	0.0059	1.004E-05	0.0000	0.000E+00	0.0000	8.369E-03	0.0005	1.997E-02	0.0011	8.224E-03	0.0005	3.193E-03	0.0002
U-238	1.982E-02	0.0011	1.862E-06	0.0000	0.000E+00	0.0000	1.647E-03	0.0001	1.657E-03	0.0001	8.066E-03	0.0004	1.097E-03	0.0001
Total	1.245E+01	0.6847	6.465E-04	0.0000	0.000E+00	0.0000	2.890E+00	0.1589	8.563E-01	0.0471	1.682E+00	0.0925	3.052E-01	0.0168

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.483E-02	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-01	0.0107
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.728E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.258E-02	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.859E-02	0.0027
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.850E+00	0.2117
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E+01	0.7601
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-02	0.0013
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.0081
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.229E-02	0.0018
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.818E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-15 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Am-241	Np-237+D	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Am-241	U-233	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
Am-241	Th-229+D	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Am-241	ΣDSR(j)		7.811E-02	7.798E-02	7.188E-02	6.615E-02	3.404E-02	1.483E-02
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Np-237+D	Np-237+D	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237+D	U-233	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
Np-237+D	Th-229+D	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Np-237+D	ΣDSR(j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.937E-01
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	U-234	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
Pu-238	Th-230	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Pu-238	Ra-226+D	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Pu-238	Pb-210+D	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pu-238	ΣDSR(j)		6.127E-02	6.077E-02	4.085E-02	2.723E-02	1.074E-03	2.728E-05
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-239	U-235+D	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
Pu-239	Pa-231	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pu-239	Ac-227+D	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Pu-239	ΣDSR(j)		6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	U-236	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Pu-240	Th-232	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Pu-240	Ra-228+D	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Pu-240	Th-228+D	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Pu-240	ΣDSR(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	Ra-226+D	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Th-230	Pb-210+D	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Th-230	ΣDSR(j)		6.017E-02	6.406E-02	2.868E-01	5.346E-01	2.278E+00	3.850E+00

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-15 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	Ra-228+D	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-232	Th-228+D	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-232	∑DSR(j)		5.496E-01	1.606E+00	1.427E+01	1.428E+01	1.408E+01	1.382E+01
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
U-234	Pb-210+D	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
U-234	∑DSR(j)		7.230E-02	7.218E-02	6.631E-02	6.093E-02	3.424E-02	2.393E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.844E-01	1.465E-01
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238+D	U-238+D	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238+D	U-234	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
U-238+D	Pb-210+D	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
U-238+D	∑DSR(j)		1.854E-01	1.851E-01	1.699E-01	1.557E-01	7.736E-02	3.229E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	1.920E+02	1.924E+02	2.087E+02	2.267E+02	4.407E+02	1.011E+03
Cs-137	5.433E+00	5.563E+00	1.761E+01	5.710E+01	6.967E+05	8.934E+10
Np-237	1.459E+01	1.462E+01	1.586E+01	1.725E+01	3.362E+01	7.744E+01
Pu-238	2.448E+02	2.468E+02	3.672E+02	5.508E+02	1.396E+04	5.498E+05
Pu-239	2.240E+02	2.241E+02	2.267E+02	2.295E+02	2.528E+02	2.853E+02
Pu-240	2.244E+02	2.245E+02	2.280E+02	2.317E+02	2.632E+02	3.087E+02
Tc-99	6.283E+01	8.353E+01	1.060E+08	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	2.795E+00	4.015E+00	2.064E+08	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	2.493E+02	2.341E+02	5.230E+01	2.806E+01	6.584E+00	3.896E+00
Th-232	2.729E+01	9.338E+00	1.051E+00	1.050E+00	1.066E+00	1.085E+00
U-234	2.075E+02	2.078E+02	2.262E+02	2.462E+02	4.381E+02	6.268E+02
U-235	2.468E+01	2.472E+01	2.675E+01	2.894E+01	5.275E+01	1.024E+02
U-238	8.091E+01	8.105E+01	8.830E+01	9.637E+01	1.939E+02	4.646E+02

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	7.811E-02	1.920E+02	1.483E-02	1.011E+03
Cs-137	1.000E+00	0.000E+00	2.761E+00	5.433E+00	1.679E-10	8.934E+10
Np-237	1.000E+00	0.000E+00	1.028E+00	1.459E+01	1.937E-01	7.744E+01
Pu-238	1.000E+00	0.000E+00	6.127E-02	2.448E+02	2.728E-05	5.498E+05
Pu-239	1.000E+00	0.000E+00	6.696E-02	2.240E+02	5.258E-02	2.853E+02
Pu-240	1.000E+00	0.000E+00	6.685E-02	2.244E+02	4.859E-02	3.087E+02
Tc-99	1.000E+00	0.000E+00	2.387E-01	6.283E+01	0.000E+00	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.367E+00	2.795E+00	0.000E+00	*8.195E+14
Th-230	1.000E+00	1.000E+03	3.850E+00	3.896E+00	3.850E+00	3.896E+00
Th-232	1.000E+00	68.3 ± 0.1	1.430E+01	1.049E+00	1.382E+01	1.085E+00
U-234	1.000E+00	0.000E+00	7.230E-02	2.075E+02	2.393E-02	6.268E+02
U-235	1.000E+00	0.000E+00	6.078E-01	2.468E+01	1.465E-01	1.024E+02
U-238	1.000E+00	0.000E+00	1.854E-01	8.091E+01	3.229E-02	4.646E+02

*At specific activity limit

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-15 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Np-237	Am-241	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Np-237	Np-237	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237	ΣDOSE (j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.936E-01
U-233	Am-241	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
U-233	Np-237	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
U-233	ΣDOSE (j)		1.816E-07	5.165E-07	1.546E-05	2.824E-05	7.089E-05	6.023E-05
Th-229	Am-241	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Th-229	Np-237	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Th-229	ΣDOSE (j)		8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.693E-05	8.629E-05
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	ΣDOSE (j)		6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
U-234	Pu-238	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	U-238	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-234	ΣDOSE (j)		7.230E-02	7.218E-02	6.625E-02	6.071E-02	3.017E-02	1.258E-02
Th-230	Pu-238	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	ΣDOSE (j)		5.826E-02	5.826E-02	5.815E-02	5.805E-02	5.712E-02	5.590E-02
Ra-226	Pu-238	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Ra-226	Th-230	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Ra-226	U-234	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
Ra-226	U-238	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
Ra-226	ΣDOSE (j)		1.903E-03	5.744E-03	1.908E-01	3.732E-01	1.620E+00	2.746E+00
Pb-210	Pu-238	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pb-210	Th-230	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Pb-210	U-234	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
Pb-210	U-238	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
Pb-210	ΣDOSE (j)		9.109E-06	5.881E-05	3.788E-02	1.036E-01	6.051E-01	1.060E+00
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
U-235	Pu-239	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235	ΣDOSE (j)		6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-15 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pa-231	U-235	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Pa-231	ΣDOSE(j)		2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Ac-227	Pu-239	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Ac-227	ΣDOSE(j)		2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	ΣDOSE(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
U-236	Pu-240	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Th-232	Pu-240	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	ΣDOSE(j)		6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Ra-228	Pu-240	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Ra-228	Th-232	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Ra-228	ΣDOSE(j)		4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-228	Pu-240	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Th-228	Th-228	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-228	ΣDOSE(j)		5.409E+00	3.991E+00	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238	U-238	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238	ΣDOSE(j)		1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Resident Farmer Deterministic Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 2.62 seconds

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Resident Farmer

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 25 mrem/yr.

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Summary : Wildlife Area Resident Farmer Deterministic Run

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Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2 (1)
B-1	Am-241	3.550E-01	3.552E-01	DCF2 (2)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2 (3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2 (4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2 (5)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2 (6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2 (7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2 (9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2 (10)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2 (12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2 (14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2 (15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2 (17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2 (18)
B-1	U-233	3.550E-02	3.552E-02	DCF2 (19)
B-1	U-234	3.480E-02	3.478E-02	DCF2 (20)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2 (21)
B-1	U-236	3.220E-02	3.219E-02	DCF2 (22)
B-1	U-238	2.960E-02	2.960E-02	DCF2 (23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3 (5)
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3 (6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3 (7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3 (9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3 (10)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (12)
D-1	Ra-228+D	2.552E-03	2.553E-03	DCF3 (13)
D-1	Tc-99	2.370E-06	2.368E-06	DCF3 (14)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.302E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.266E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.890E-04	1.887E-04	DCF3(19)
D-1	U-234	1.810E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(21)
D-1	U-236	1.740E-04	1.739E-04	DCF3(22)
D-1	U-238	1.670E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-25 MREM.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Am-241	1.000E+00
Thickness:	0.15 meters	Cs-137	1.000E+00
Cover Depth:	0.00 meters	Np-237	1.000E+00
		Pu-238	1.000E+00
		Pu-239	1.000E+00
		Pu-240	1.000E+00
		Tc-99	1.000E+00
		Th-228	1.000E+00
		Th-230	1.000E+00
		Th-232	1.000E+00
		U-234	1.000E+00
		U-235	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.114E+01	1.044E+01	1.740E+01	1.691E+01	1.735E+01	1.818E+01
M(t):	4.457E-01	4.178E-01	6.959E-01	6.764E-01	6.939E-01	7.273E-01

Maximum TDOSE(t): 1.818E+01 mrem/yr at t = 1.000E+03 years

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.015E-02	0.0027	1.278E-04	0.0000	0.000E+00	0.0000	1.558E-02	0.0014	5.717E-03	0.0005	6.311E-04	0.0001	2.591E-02	0.0023
Cs-137	2.274E+00	0.2041	5.129E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0036	2.563E-01	0.0230	1.886E-01	0.0169	1.666E-03	0.0001
Np-237	7.719E-01	0.0693	6.662E-05	0.0000	0.000E+00	0.0000	1.722E-01	0.0155	6.839E-02	0.0061	9.437E-04	0.0001	1.436E-02	0.0013
Pu-238	9.534E-05	0.0000	1.461E-04	0.0000	0.000E+00	0.0000	1.786E-02	0.0016	1.311E-02	0.0012	3.618E-04	0.0000	2.970E-02	0.0027
Pu-239	2.054E-04	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Pu-240	9.266E-05	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Tc-99	7.626E-05	0.0000	1.507E-08	0.0000	0.000E+00	0.0000	2.182E-01	0.0196	7.221E-04	0.0001	1.968E-02	0.0018	7.220E-05	0.0000
Th-228	5.334E+00	0.4787	4.879E-05	0.0000	0.000E+00	0.0000	9.371E-03	0.0008	6.878E-03	0.0006	9.491E-04	0.0001	1.558E-02	0.0014
Th-230	2.431E-03	0.0002	1.333E-04	0.0000	0.000E+00	0.0000	1.655E-02	0.0015	1.205E-02	0.0011	1.768E-03	0.0002	2.723E-02	0.0024
Th-232	2.703E-01	0.0243	1.483E-04	0.0000	0.000E+00	0.0000	1.348E-01	0.0121	3.670E-02	0.0033	7.254E-02	0.0065	3.512E-02	0.0032
U-234	2.774E-04	0.0000	1.253E-05	0.0000	0.000E+00	0.0000	9.508E-03	0.0009	9.569E-03	0.0009	4.660E-02	0.0042	6.337E-03	0.0006
U-235	5.381E-01	0.0483	1.134E-05	0.0000	0.000E+00	0.0000	9.212E-03	0.0008	9.286E-03	0.0008	4.512E-02	0.0040	6.137E-03	0.0006
U-238	1.139E-01	0.0102	1.067E-05	0.0000	0.000E+00	0.0000	9.434E-03	0.0008	9.495E-03	0.0009	4.624E-02	0.0041	6.288E-03	0.0006
Total	9.336E+00	0.8378	1.025E-03	0.0001	0.000E+00	0.0000	6.916E-01	0.0621	4.568E-01	0.0410	4.242E-01	0.0381	2.332E-01	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.811E-02	0.0070
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.2478
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.028E+00	0.0922
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.127E-02	0.0055
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.696E-02	0.0060
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.685E-02	0.0060
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.387E-01	0.0214
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.367E+00	0.4817
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.017E-02	0.0054
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.496E-01	0.0493
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.230E-02	0.0065
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.0545
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-01	0.0166
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.114E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.010E-02	0.0029	1.276E-04	0.0000	0.000E+00	0.0000	1.555E-02	0.0015	5.708E-03	0.0005	6.301E-04	0.0001	2.586E-02	0.0025
Cs-137	2.221E+00	0.2127	5.009E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0037	2.503E-01	0.0240	1.842E-01	0.0176	1.627E-03	0.0002
Np-237	7.706E-01	0.0738	6.650E-05	0.0000	0.000E+00	0.0000	1.719E-01	0.0165	6.828E-02	0.0065	9.424E-04	0.0001	1.434E-02	0.0014
Pu-238	9.457E-05	0.0000	1.449E-04	0.0000	0.000E+00	0.0000	1.771E-02	0.0017	1.300E-02	0.0012	3.590E-04	0.0000	2.946E-02	0.0028
Pu-239	2.054E-04	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Pu-240	9.263E-05	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Tc-99	5.725E-05	0.0000	1.131E-08	0.0000	0.000E+00	0.0000	1.641E-01	0.0157	5.464E-04	0.0001	1.486E-02	0.0014	5.420E-05	0.0000
Th-228	3.713E+00	0.3555	3.396E-05	0.0000	0.000E+00	0.0000	6.523E-03	0.0006	4.787E-03	0.0005	6.606E-04	0.0001	1.085E-02	0.0010
Th-230	5.576E-03	0.0005	1.333E-04	0.0000	0.000E+00	0.0000	1.695E-02	0.0016	1.215E-02	0.0012	2.003E-03	0.0002	2.725E-02	0.0026
Th-232	9.039E-01	0.0865	1.525E-04	0.0000	0.000E+00	0.0000	3.638E-01	0.0348	8.566E-02	0.0082	2.075E-01	0.0199	4.530E-02	0.0043
U-234	2.769E-04	0.0000	1.251E-05	0.0000	0.000E+00	0.0000	9.491E-03	0.0009	9.552E-03	0.0009	4.652E-02	0.0045	6.326E-03	0.0006
U-235	5.371E-01	0.0514	1.133E-05	0.0000	0.000E+00	0.0000	9.207E-03	0.0009	9.314E-03	0.0009	4.504E-02	0.0043	6.128E-03	0.0006
U-238	1.137E-01	0.0109	1.065E-05	0.0000	0.000E+00	0.0000	9.418E-03	0.0009	9.479E-03	0.0009	4.616E-02	0.0044	6.277E-03	0.0006
Total	8.296E+00	0.7943	1.013E-03	0.0001	0.000E+00	0.0000	8.626E-01	0.0826	4.974E-01	0.0476	5.497E-01	0.0526	2.383E-01	0.0228

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.798E-02	0.0075
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.2582
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E+00	0.0982
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.077E-02	0.0058
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.694E-02	0.0064
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.682E-02	0.0064
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E-01	0.0172
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E+00	0.3577
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.406E-02	0.0061
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.606E+00	0.1538
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.218E-02	0.0069
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.0581
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.851E-01	0.0177
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.044E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Table with 14 columns: Radionuclide, Ground (mrem/yr, fract.), Inhalation (mrem/yr, fract.), Radon (mrem/yr, fract.), Plant (mrem/yr, fract.), Meat (mrem/yr, fract.), Milk (mrem/yr, fract.), Soil (mrem/yr, fract.). Rows include Am-241, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, U-238, and Total.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Table with 14 columns: Radionuclide, Water (mrem/yr, fract.), Fish (mrem/yr, fract.), Radon (mrem/yr, fract.), Plant (mrem/yr, fract.), Meat (mrem/yr, fract.), Milk (mrem/yr, fract.), All Pathways* (mrem/yr, fract.). Rows include Am-241, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, U-238, and Total.

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.554E-02	0.0015	1.082E-04	0.0000	0.000E+00	0.0000	1.319E-02	0.0008	4.842E-03	0.0003	5.343E-04	0.0000	2.193E-02	0.0013
Cs-137	2.164E-01	0.0128	4.880E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0002	2.438E-02	0.0014	1.794E-02	0.0011	1.585E-04	0.0000
Np-237	6.532E-01	0.0386	5.638E-05	0.0000	0.000E+00	0.0000	1.457E-01	0.0086	5.788E-02	0.0034	8.166E-04	0.0000	1.216E-02	0.0007
Pu-238	4.242E-05	0.0000	6.490E-05	0.0000	0.000E+00	0.0000	7.936E-03	0.0005	5.825E-03	0.0003	1.689E-04	0.0000	1.320E-02	0.0008
Pu-239	2.005E-04	0.0000	1.562E-04	0.0000	0.000E+00	0.0000	1.902E-02	0.0011	1.396E-02	0.0008	3.853E-04	0.0000	3.163E-02	0.0019
Pu-240	8.975E-05	0.0000	1.549E-04	0.0000	0.000E+00	0.0000	1.888E-02	0.0011	1.385E-02	0.0008	3.824E-04	0.0000	3.139E-02	0.0019
Tc-99	2.670E-17	0.0000	5.275E-21	0.0000	0.000E+00	0.0000	7.651E-14	0.0000	2.548E-16	0.0000	6.928E-15	0.0000	2.527E-17	0.0000
Th-228	9.779E-16	0.0000	8.945E-21	0.0000	0.000E+00	0.0000	1.718E-18	0.0000	1.261E-18	0.0000	1.740E-19	0.0000	2.857E-18	0.0000
Th-230	3.063E-01	0.0181	1.336E-04	0.0000	0.000E+00	0.0000	9.600E-02	0.0057	4.599E-02	0.0027	5.040E-02	0.0030	3.577E-02	0.0021
Th-232	1.026E+01	0.6065	2.252E-04	0.0000	0.000E+00	0.0000	2.158E+00	0.1276	4.754E-01	0.0281	1.259E+00	0.0744	1.371E-01	0.0081
U-234	3.654E-04	0.0000	1.063E-05	0.0000	0.000E+00	0.0000	8.024E-03	0.0005	8.054E-03	0.0005	3.913E-02	0.0023	5.344E-03	0.0003
U-235	4.539E-01	0.0268	1.092E-05	0.0000	0.000E+00	0.0000	9.116E-03	0.0005	1.187E-02	0.0007	3.794E-02	0.0022	5.543E-03	0.0003
U-238	9.564E-02	0.0057	8.959E-06	0.0000	0.000E+00	0.0000	7.923E-03	0.0005	7.974E-03	0.0005	3.883E-02	0.0023	5.280E-03	0.0003
Total	1.201E+01	0.7100	9.300E-04	0.0001	0.000E+00	0.0000	2.487E+00	0.1471	6.700E-01	0.0396	1.445E+00	0.0855	2.995E-01	0.0177

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.615E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.0155
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.698E-01	0.0514
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.723E-02	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.536E-02	0.0039
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.475E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.374E-14	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.839E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.346E-01	0.0316
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.428E+01	0.8447
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.093E-02	0.0036
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.0307
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-01	0.0092
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.691E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.316E-02	0.0008	5.559E-05	0.0000	0.000E+00	0.0000	6.787E-03	0.0004	2.491E-03	0.0001	2.745E-04	0.0000	1.127E-02	0.0006
Cs-137	1.774E-05	0.0000	3.999E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
Np-237	3.350E-01	0.0193	2.893E-05	0.0000	0.000E+00	0.0000	7.473E-02	0.0043	2.969E-02	0.0017	4.549E-04	0.0000	6.241E-03	0.0004
Pu-238	2.254E-06	0.0000	2.531E-06	0.0000	0.000E+00	0.0000	3.110E-04	0.0000	2.287E-04	0.0000	1.465E-05	0.0000	5.152E-04	0.0000
Pu-239	1.822E-04	0.0000	1.418E-04	0.0000	0.000E+00	0.0000	1.727E-02	0.0010	1.267E-02	0.0007	3.498E-04	0.0000	2.872E-02	0.0017
Pu-240	7.900E-05	0.0000	1.364E-04	0.0000	0.000E+00	0.0000	1.661E-02	0.0010	1.219E-02	0.0007	3.369E-04	0.0000	2.763E-02	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.325E+00	0.0764	1.349E-04	0.0000	0.000E+00	0.0000	4.258E-01	0.0245	1.986E-01	0.0114	2.536E-01	0.0146	7.491E-02	0.0043
Th-232	1.011E+01	0.5825	2.220E-04	0.0000	0.000E+00	0.0000	2.126E+00	0.1226	4.685E-01	0.0270	1.240E+00	0.0715	1.351E-01	0.0078
U-234	2.508E-03	0.0001	5.621E-06	0.0000	0.000E+00	0.0000	4.726E-03	0.0003	4.345E-03	0.0003	1.985E-02	0.0011	2.803E-03	0.0002
U-235	2.342E-01	0.0135	1.075E-05	0.0000	0.000E+00	0.0000	8.975E-03	0.0005	1.792E-02	0.0010	1.910E-02	0.0011	4.156E-03	0.0002
U-238	4.751E-02	0.0027	4.456E-06	0.0000	0.000E+00	0.0000	3.941E-03	0.0002	3.966E-03	0.0002	1.931E-02	0.0011	2.626E-03	0.0002
Total	1.206E+01	0.6954	7.429E-04	0.0000	0.000E+00	0.0000	2.686E+00	0.1548	7.505E-01	0.0433	1.554E+00	0.0896	2.940E-01	0.0169

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.404E-02	0.0020
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.461E-01	0.0257
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-03	0.0001
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.933E-02	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.699E-02	0.0033
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.278E+00	0.1313
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.408E+01	0.8114
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.424E-02	0.0020
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E-01	0.0164
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.736E-02	0.0045
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.748E-03	0.0003	2.418E-05	0.0000	0.000E+00	0.0000	2.957E-03	0.0002	1.085E-03	0.0001	1.194E-04	0.0000	4.900E-03	0.0003
Cs-137	1.383E-10	0.0000	3.119E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
Np-237	1.454E-01	0.0080	1.258E-05	0.0000	0.000E+00	0.0000	3.243E-02	0.0018	1.289E-02	0.0007	2.165E-04	0.0000	2.715E-03	0.0001
Pu-238	1.996E-06	0.0000	4.492E-08	0.0000	0.000E+00	0.0000	6.711E-06	0.0000	4.957E-06	0.0000	4.078E-06	0.0000	9.495E-06	0.0000
Pu-239	1.615E-04	0.0000	1.256E-04	0.0000	0.000E+00	0.0000	1.530E-02	0.0008	1.123E-02	0.0006	3.100E-04	0.0000	2.545E-02	0.0014
Pu-240	6.735E-05	0.0000	1.163E-04	0.0000	0.000E+00	0.0000	1.416E-02	0.0008	1.040E-02	0.0006	2.874E-04	0.0000	2.355E-02	0.0013
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.242E+00	0.1233	1.353E-04	0.0000	0.000E+00	0.0000	7.237E-01	0.0398	3.364E-01	0.0185	4.372E-01	0.0240	1.101E-01	0.0061
Th-232	9.923E+00	0.5457	2.179E-04	0.0000	0.000E+00	0.0000	2.088E+00	0.1148	4.600E-01	0.0253	1.218E+00	0.0670	1.327E-01	0.0073
U-234	6.675E-03	0.0004	2.746E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0002	2.654E-03	0.0001	9.360E-03	0.0005	1.456E-03	0.0001
U-235	1.067E-01	0.0059	1.004E-05	0.0000	0.000E+00	0.0000	8.369E-03	0.0005	1.997E-02	0.0011	8.224E-03	0.0005	3.193E-03	0.0002
U-238	1.982E-02	0.0011	1.862E-06	0.0000	0.000E+00	0.0000	1.647E-03	0.0001	1.657E-03	0.0001	8.066E-03	0.0004	1.097E-03	0.0001
Total	1.245E+01	0.6847	6.465E-04	0.0000	0.000E+00	0.0000	2.890E+00	0.1589	8.563E-01	0.0471	1.682E+00	0.0925	3.052E-01	0.0168

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.483E-02	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-01	0.0107
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.728E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.258E-02	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.859E-02	0.0027
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.850E+00	0.2117
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E+01	0.7601
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-02	0.0013
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.0081
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.229E-02	0.0018
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.818E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-25 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Am-241	Np-237+D	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Am-241	U-233	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
Am-241	Th-229+D	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Am-241	ΣDSR(j)		7.811E-02	7.798E-02	7.188E-02	6.615E-02	3.404E-02	1.483E-02
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Np-237+D	Np-237+D	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237+D	U-233	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
Np-237+D	Th-229+D	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Np-237+D	ΣDSR(j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.937E-01
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	U-234	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
Pu-238	Th-230	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Pu-238	Ra-226+D	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Pu-238	Pb-210+D	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pu-238	ΣDSR(j)		6.127E-02	6.077E-02	4.085E-02	2.723E-02	1.074E-03	2.728E-05
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-239	U-235+D	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
Pu-239	Pa-231	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pu-239	Ac-227+D	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Pu-239	ΣDSR(j)		6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	U-236	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Pu-240	Th-232	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Pu-240	Ra-228+D	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Pu-240	Th-228+D	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Pu-240	ΣDSR(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	Ra-226+D	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Th-230	Pb-210+D	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Th-230	ΣDSR(j)		6.017E-02	6.406E-02	2.868E-01	5.346E-01	2.278E+00	3.850E+00

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-25 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	Ra-228+D	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-232	Th-228+D	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-232	∑DSR(j)		5.496E-01	1.606E+00	1.427E+01	1.428E+01	1.408E+01	1.382E+01
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
U-234	Pb-210+D	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
U-234	∑DSR(j)		7.230E-02	7.218E-02	6.631E-02	6.093E-02	3.424E-02	2.393E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.844E-01	1.465E-01
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238+D	U-238+D	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238+D	U-234	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
U-238+D	Pb-210+D	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
U-238+D	∑DSR(j)		1.854E-01	1.851E-01	1.699E-01	1.557E-01	7.736E-02	3.229E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-25 MREM.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	3.201E+02	3.206E+02	3.478E+02	3.779E+02	7.344E+02	1.685E+03
Cs-137	9.056E+00	9.271E+00	2.936E+01	9.517E+01	1.161E+06	1.489E+11
Np-237	2.432E+01	2.436E+01	2.644E+01	2.874E+01	5.604E+01	1.291E+02
Pu-238	4.080E+02	4.114E+02	6.121E+02	9.180E+02	2.327E+04	9.164E+05
Pu-239	3.734E+02	3.734E+02	3.779E+02	3.825E+02	4.213E+02	4.755E+02
Pu-240	3.740E+02	3.741E+02	3.800E+02	3.861E+02	4.387E+02	5.145E+02
Tc-99	1.047E+02	1.392E+02	1.766E+08	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	4.658E+00	6.692E+00	3.440E+08	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	4.155E+02	3.902E+02	8.717E+01	4.677E+01	1.097E+01	6.493E+00
Th-232	4.549E+01	1.556E+01	1.752E+00	1.750E+00	1.776E+00	1.809E+00
U-234	3.458E+02	3.464E+02	3.770E+02	4.103E+02	7.301E+02	1.045E+03
U-235	4.113E+01	4.120E+01	4.458E+01	4.823E+01	8.792E+01	1.706E+02
U-238	1.349E+02	1.351E+02	1.472E+02	1.606E+02	3.232E+02	7.743E+02

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	7.811E-02	3.201E+02	1.483E-02	1.685E+03
Cs-137	1.000E+00	0.000E+00	2.761E+00	9.056E+00	1.679E-10	1.489E+11
Np-237	1.000E+00	0.000E+00	1.028E+00	2.432E+01	1.937E-01	1.291E+02
Pu-238	1.000E+00	0.000E+00	6.127E-02	4.080E+02	2.728E-05	9.164E+05
Pu-239	1.000E+00	0.000E+00	6.696E-02	3.734E+02	5.258E-02	4.755E+02
Pu-240	1.000E+00	0.000E+00	6.685E-02	3.740E+02	4.859E-02	5.145E+02
Tc-99	1.000E+00	0.000E+00	2.387E-01	1.047E+02	0.000E+00	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.367E+00	4.658E+00	0.000E+00	*8.195E+14
Th-230	1.000E+00	1.000E+03	3.850E+00	6.493E+00	3.850E+00	6.493E+00
Th-232	1.000E+00	68.3 ± 0.1	1.430E+01	1.749E+00	1.382E+01	1.809E+00
U-234	1.000E+00	0.000E+00	7.230E-02	3.458E+02	2.393E-02	1.045E+03
U-235	1.000E+00	0.000E+00	6.078E-01	4.113E+01	1.465E-01	1.706E+02
U-238	1.000E+00	0.000E+00	1.854E-01	1.349E+02	3.229E-02	7.743E+02

*At specific activity limit

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-25 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Np-237	Am-241	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Np-237	Np-237	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237	ΣDOSE (j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.936E-01
U-233	Am-241	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
U-233	Np-237	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
U-233	ΣDOSE (j)		1.816E-07	5.165E-07	1.546E-05	2.824E-05	7.089E-05	6.023E-05
Th-229	Am-241	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Th-229	Np-237	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Th-229	ΣDOSE (j)		8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.693E-05	8.629E-05
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	ΣDOSE (j)		6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
U-234	Pu-238	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	U-238	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-234	ΣDOSE (j)		7.230E-02	7.218E-02	6.625E-02	6.071E-02	3.017E-02	1.258E-02
Th-230	Pu-238	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	ΣDOSE (j)		5.826E-02	5.826E-02	5.815E-02	5.805E-02	5.712E-02	5.590E-02
Ra-226	Pu-238	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Ra-226	Th-230	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Ra-226	U-234	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
Ra-226	U-238	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
Ra-226	ΣDOSE (j)		1.903E-03	5.744E-03	1.908E-01	3.732E-01	1.620E+00	2.746E+00
Pb-210	Pu-238	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pb-210	Th-230	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Pb-210	U-234	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
Pb-210	U-238	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
Pb-210	ΣDOSE (j)		9.109E-06	5.881E-05	3.788E-02	1.036E-01	6.051E-01	1.060E+00
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
U-235	Pu-239	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235	ΣDOSE (j)		6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-25 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pu-231	Pu-239	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pu-231	U-235	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Pu-231	ΣDOSE(j)		2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Ac-227	Pu-239	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Ac-227	ΣDOSE(j)		2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	ΣDOSE(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
U-236	Pu-240	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Th-232	Pu-240	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	ΣDOSE(j)		6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Ra-228	Pu-240	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Ra-228	Th-232	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Ra-228	ΣDOSE(j)		4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-228	Pu-240	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Th-228	Th-228	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-228	ΣDOSE(j)		5.409E+00	3.991E+00	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238	U-238	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238	ΣDOSE(j)		1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Resident Farmer Deterministic Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 2.58 seconds

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Resident Farmer

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 100 mrem/yr.

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Summary : Wildlife Area Resident Farmer Deterministic Run

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Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2 (1)
B-1	Am-241	3.550E-01	3.552E-01	DCF2 (2)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2 (3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2 (4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2 (5)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2 (6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2 (7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2 (9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2 (10)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2 (12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2 (14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2 (15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2 (17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2 (18)
B-1	U-233	3.550E-02	3.552E-02	DCF2 (19)
B-1	U-234	3.480E-02	3.478E-02	DCF2 (20)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2 (21)
B-1	U-236	3.220E-02	3.219E-02	DCF2 (22)
B-1	U-238	2.960E-02	2.960E-02	DCF2 (23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3 (5)
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3 (6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3 (7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3 (9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3 (10)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (12)
D-1	Ra-228+D	2.552E-03	2.553E-03	DCF3 (13)
D-1	Tc-99	2.370E-06	2.368E-06	DCF3 (14)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.302E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.266E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.890E-04	1.887E-04	DCF3(19)
D-1	U-234	1.810E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(21)
D-1	U-236	1.740E-04	1.739E-04	DCF3(22)
D-1	U-238	1.670E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+02	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-100 MREM.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Am-241	1.000E+00
Thickness:	0.15 meters	Cs-137	1.000E+00
Cover Depth:	0.00 meters	Np-237	1.000E+00
		Pu-238	1.000E+00
		Pu-239	1.000E+00
		Pu-240	1.000E+00
		Tc-99	1.000E+00
		Th-228	1.000E+00
		Th-230	1.000E+00
		Th-232	1.000E+00
		U-234	1.000E+00
		U-235	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.114E+01	1.044E+01	1.740E+01	1.691E+01	1.735E+01	1.818E+01
M(t):	1.114E-01	1.044E-01	1.740E-01	1.691E-01	1.735E-01	1.818E-01

Maximum TDOSE(t): 1.818E+01 mrem/yr at t = 1.000E+03 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.015E-02	0.0027	1.278E-04	0.0000	0.000E+00	0.0000	1.558E-02	0.0014	5.717E-03	0.0005	6.311E-04	0.0001	2.591E-02	0.0023
Cs-137	2.274E+00	0.2041	5.129E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0036	2.563E-01	0.0230	1.886E-01	0.0169	1.666E-03	0.0001
Np-237	7.719E-01	0.0693	6.662E-05	0.0000	0.000E+00	0.0000	1.722E-01	0.0155	6.839E-02	0.0061	9.437E-04	0.0001	1.436E-02	0.0013
Pu-238	9.534E-05	0.0000	1.461E-04	0.0000	0.000E+00	0.0000	1.786E-02	0.0016	1.311E-02	0.0012	3.618E-04	0.0000	2.970E-02	0.0027
Pu-239	2.054E-04	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Pu-240	9.266E-05	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Tc-99	7.626E-05	0.0000	1.507E-08	0.0000	0.000E+00	0.0000	2.182E-01	0.0196	7.221E-04	0.0001	1.968E-02	0.0018	7.220E-05	0.0000
Th-228	5.334E+00	0.4787	4.879E-05	0.0000	0.000E+00	0.0000	9.371E-03	0.0008	6.878E-03	0.0006	9.491E-04	0.0001	1.558E-02	0.0014
Th-230	2.431E-03	0.0002	1.333E-04	0.0000	0.000E+00	0.0000	1.655E-02	0.0015	1.205E-02	0.0011	1.768E-03	0.0002	2.723E-02	0.0024
Th-232	2.703E-01	0.0243	1.483E-04	0.0000	0.000E+00	0.0000	1.348E-01	0.0121	3.670E-02	0.0033	7.254E-02	0.0065	3.512E-02	0.0032
U-234	2.774E-04	0.0000	1.253E-05	0.0000	0.000E+00	0.0000	9.508E-03	0.0009	9.569E-03	0.0009	4.660E-02	0.0042	6.337E-03	0.0006
U-235	5.381E-01	0.0483	1.134E-05	0.0000	0.000E+00	0.0000	9.212E-03	0.0008	9.286E-03	0.0008	4.512E-02	0.0040	6.137E-03	0.0006
U-238	1.139E-01	0.0102	1.067E-05	0.0000	0.000E+00	0.0000	9.434E-03	0.0008	9.495E-03	0.0009	4.624E-02	0.0041	6.288E-03	0.0006
Total	9.336E+00	0.8378	1.025E-03	0.0001	0.000E+00	0.0000	6.916E-01	0.0621	4.568E-01	0.0410	4.242E-01	0.0381	2.332E-01	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.811E-02	0.0070
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.2478
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.028E+00	0.0922
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.127E-02	0.0055
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.696E-02	0.0060
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.685E-02	0.0060
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.387E-01	0.0214
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.367E+00	0.4817
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.017E-02	0.0054
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.496E-01	0.0493
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.230E-02	0.0065
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.0545
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-01	0.0166
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.114E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.010E-02	0.0029	1.276E-04	0.0000	0.000E+00	0.0000	1.555E-02	0.0015	5.708E-03	0.0005	6.301E-04	0.0001	2.586E-02	0.0025
Cs-137	2.221E+00	0.2127	5.009E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0037	2.503E-01	0.0240	1.842E-01	0.0176	1.627E-03	0.0002
Np-237	7.706E-01	0.0738	6.650E-05	0.0000	0.000E+00	0.0000	1.719E-01	0.0165	6.828E-02	0.0065	9.424E-04	0.0001	1.434E-02	0.0014
Pu-238	9.457E-05	0.0000	1.449E-04	0.0000	0.000E+00	0.0000	1.771E-02	0.0017	1.300E-02	0.0012	3.590E-04	0.0000	2.946E-02	0.0028
Pu-239	2.054E-04	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Pu-240	9.263E-05	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Tc-99	5.725E-05	0.0000	1.131E-08	0.0000	0.000E+00	0.0000	1.641E-01	0.0157	5.464E-04	0.0001	1.486E-02	0.0014	5.420E-05	0.0000
Th-228	3.713E+00	0.3555	3.396E-05	0.0000	0.000E+00	0.0000	6.523E-03	0.0006	4.787E-03	0.0005	6.606E-04	0.0001	1.085E-02	0.0010
Th-230	5.576E-03	0.0005	1.333E-04	0.0000	0.000E+00	0.0000	1.695E-02	0.0016	1.215E-02	0.0012	2.003E-03	0.0002	2.725E-02	0.0026
Th-232	9.039E-01	0.0865	1.525E-04	0.0000	0.000E+00	0.0000	3.638E-01	0.0348	8.566E-02	0.0082	2.075E-01	0.0199	4.530E-02	0.0043
U-234	2.769E-04	0.0000	1.251E-05	0.0000	0.000E+00	0.0000	9.491E-03	0.0009	9.552E-03	0.0009	4.652E-02	0.0045	6.326E-03	0.0006
U-235	5.371E-01	0.0514	1.133E-05	0.0000	0.000E+00	0.0000	9.207E-03	0.0009	9.314E-03	0.0009	4.504E-02	0.0043	6.128E-03	0.0006
U-238	1.137E-01	0.0109	1.065E-05	0.0000	0.000E+00	0.0000	9.418E-03	0.0009	9.479E-03	0.0009	4.616E-02	0.0044	6.277E-03	0.0006
Total	8.296E+00	0.7943	1.013E-03	0.0001	0.000E+00	0.0000	8.626E-01	0.0826	4.974E-01	0.0476	5.497E-01	0.0526	2.383E-01	0.0228

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.798E-02	0.0075
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.2582
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E+00	0.0982
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.077E-02	0.0058
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.694E-02	0.0064
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.682E-02	0.0064
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E-01	0.0172
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E+00	0.3577
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.406E-02	0.0061
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.606E+00	0.1538
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.218E-02	0.0069
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.0581
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.851E-01	0.0177
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.044E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.775E-02	0.0016	1.176E-04	0.0000	0.000E+00	0.0000	1.434E-02	0.0008	5.262E-03	0.0003	5.807E-04	0.0000	2.384E-02	0.0014
Cs-137	7.015E-01	0.0403	1.582E-08	0.0000	0.000E+00	0.0000	1.232E-02	0.0007	7.904E-02	0.0045	5.817E-02	0.0033	5.138E-04	0.0000
Np-237	7.101E-01	0.0408	6.128E-05	0.0000	0.000E+00	0.0000	1.584E-01	0.0091	6.292E-02	0.0036	8.779E-04	0.0001	1.321E-02	0.0008
Pu-238	6.358E-05	0.0000	9.736E-05	0.0000	0.000E+00	0.0000	1.190E-02	0.0007	8.738E-03	0.0005	2.463E-04	0.0000	1.980E-02	0.0011
Pu-239	2.030E-04	0.0000	1.581E-04	0.0000	0.000E+00	0.0000	1.925E-02	0.0011	1.413E-02	0.0008	3.900E-04	0.0000	3.202E-02	0.0018
Pu-240	9.119E-05	0.0000	1.574E-04	0.0000	0.000E+00	0.0000	1.918E-02	0.0011	1.408E-02	0.0008	3.885E-04	0.0000	3.189E-02	0.0018
Tc-99	4.512E-11	0.0000	8.916E-15	0.0000	0.000E+00	0.0000	1.293E-07	0.0000	4.307E-10	0.0000	1.171E-08	0.0000	4.272E-11	0.0000
Th-228	7.222E-08	0.0000	6.607E-13	0.0000	0.000E+00	0.0000	1.269E-10	0.0000	9.312E-11	0.0000	1.285E-11	0.0000	2.110E-10	0.0000
Th-230	1.570E-01	0.0090	1.334E-04	0.0000	0.000E+00	0.0000	5.085E-02	0.0029	2.557E-02	0.0015	2.264E-02	0.0013	3.055E-02	0.0018
Th-232	1.024E+01	0.5888	2.254E-04	0.0000	0.000E+00	0.0000	2.157E+00	0.1240	4.752E-01	0.0273	1.258E+00	0.0723	1.371E-01	0.0079
U-234	2.891E-04	0.0000	1.154E-05	0.0000	0.000E+00	0.0000	8.724E-03	0.0005	8.774E-03	0.0005	4.269E-02	0.0025	5.818E-03	0.0003
U-235	4.939E-01	0.0284	1.097E-05	0.0000	0.000E+00	0.0000	9.119E-03	0.0005	1.065E-02	0.0006	4.137E-02	0.0024	5.796E-03	0.0003
U-238	1.044E-01	0.0060	9.776E-06	0.0000	0.000E+00	0.0000	8.646E-03	0.0005	8.701E-03	0.0005	4.237E-02	0.0024	5.762E-03	0.0003
Total	1.244E+01	0.7150	9.829E-04	0.0001	0.000E+00	0.0000	2.470E+00	0.1420	7.130E-01	0.0410	1.468E+00	0.0844	3.063E-01	0.0176

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.188E-02	0.0041
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.516E-01	0.0490
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.455E-01	0.0544
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.085E-02	0.0023
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.616E-02	0.0038
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.579E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.415E-07	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.267E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.868E-01	0.0165
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.427E+01	0.8203
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.631E-02	0.0038
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.608E-01	0.0322
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.699E-01	0.0098
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.554E-02	0.0015	1.082E-04	0.0000	0.000E+00	0.0000	1.319E-02	0.0008	4.842E-03	0.0003	5.343E-04	0.0000	2.193E-02	0.0013
Cs-137	2.164E-01	0.0128	4.880E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0002	2.438E-02	0.0014	1.794E-02	0.0011	1.585E-04	0.0000
Np-237	6.532E-01	0.0386	5.638E-05	0.0000	0.000E+00	0.0000	1.457E-01	0.0086	5.788E-02	0.0034	8.166E-04	0.0000	1.216E-02	0.0007
Pu-238	4.242E-05	0.0000	6.490E-05	0.0000	0.000E+00	0.0000	7.936E-03	0.0005	5.825E-03	0.0003	1.689E-04	0.0000	1.320E-02	0.0008
Pu-239	2.005E-04	0.0000	1.562E-04	0.0000	0.000E+00	0.0000	1.902E-02	0.0011	1.396E-02	0.0008	3.853E-04	0.0000	3.163E-02	0.0019
Pu-240	8.975E-05	0.0000	1.549E-04	0.0000	0.000E+00	0.0000	1.888E-02	0.0011	1.385E-02	0.0008	3.824E-04	0.0000	3.139E-02	0.0019
Tc-99	2.670E-17	0.0000	5.275E-21	0.0000	0.000E+00	0.0000	7.651E-14	0.0000	2.548E-16	0.0000	6.928E-15	0.0000	2.527E-17	0.0000
Th-228	9.779E-16	0.0000	8.945E-21	0.0000	0.000E+00	0.0000	1.718E-18	0.0000	1.261E-18	0.0000	1.740E-19	0.0000	2.857E-18	0.0000
Th-230	3.063E-01	0.0181	1.336E-04	0.0000	0.000E+00	0.0000	9.600E-02	0.0057	4.599E-02	0.0027	5.040E-02	0.0030	3.577E-02	0.0021
Th-232	1.026E+01	0.6065	2.252E-04	0.0000	0.000E+00	0.0000	2.158E+00	0.1276	4.754E-01	0.0281	1.259E+00	0.0744	1.371E-01	0.0081
U-234	3.654E-04	0.0000	1.063E-05	0.0000	0.000E+00	0.0000	8.024E-03	0.0005	8.054E-03	0.0005	3.913E-02	0.0023	5.344E-03	0.0003
U-235	4.539E-01	0.0268	1.092E-05	0.0000	0.000E+00	0.0000	9.116E-03	0.0005	1.187E-02	0.0007	3.794E-02	0.0022	5.543E-03	0.0003
U-238	9.564E-02	0.0057	8.959E-06	0.0000	0.000E+00	0.0000	7.923E-03	0.0005	7.974E-03	0.0005	3.883E-02	0.0023	5.280E-03	0.0003
Total	1.201E+01	0.7100	9.300E-04	0.0001	0.000E+00	0.0000	2.487E+00	0.1471	6.700E-01	0.0396	1.445E+00	0.0855	2.995E-01	0.0177

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.615E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.0155
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.698E-01	0.0514
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.723E-02	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.536E-02	0.0039
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.475E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.374E-14	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.839E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.346E-01	0.0316
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.428E+01	0.8447
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.093E-02	0.0036
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.0307
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-01	0.0092
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.691E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.316E-02	0.0008	5.559E-05	0.0000	0.000E+00	0.0000	6.787E-03	0.0004	2.491E-03	0.0001	2.745E-04	0.0000	1.127E-02	0.0006
Cs-137	1.774E-05	0.0000	3.999E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
Np-237	3.350E-01	0.0193	2.893E-05	0.0000	0.000E+00	0.0000	7.473E-02	0.0043	2.969E-02	0.0017	4.549E-04	0.0000	6.241E-03	0.0004
Pu-238	2.254E-06	0.0000	2.531E-06	0.0000	0.000E+00	0.0000	3.110E-04	0.0000	2.287E-04	0.0000	1.465E-05	0.0000	5.152E-04	0.0000
Pu-239	1.822E-04	0.0000	1.418E-04	0.0000	0.000E+00	0.0000	1.727E-02	0.0010	1.267E-02	0.0007	3.498E-04	0.0000	2.872E-02	0.0017
Pu-240	7.900E-05	0.0000	1.364E-04	0.0000	0.000E+00	0.0000	1.661E-02	0.0010	1.219E-02	0.0007	3.369E-04	0.0000	2.763E-02	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.325E+00	0.0764	1.349E-04	0.0000	0.000E+00	0.0000	4.258E-01	0.0245	1.986E-01	0.0114	2.536E-01	0.0146	7.491E-02	0.0043
Th-232	1.011E+01	0.5825	2.220E-04	0.0000	0.000E+00	0.0000	2.126E+00	0.1226	4.685E-01	0.0270	1.240E+00	0.0715	1.351E-01	0.0078
U-234	2.508E-03	0.0001	5.621E-06	0.0000	0.000E+00	0.0000	4.726E-03	0.0003	4.345E-03	0.0003	1.985E-02	0.0011	2.803E-03	0.0002
U-235	2.342E-01	0.0135	1.075E-05	0.0000	0.000E+00	0.0000	8.975E-03	0.0005	1.792E-02	0.0010	1.910E-02	0.0011	4.156E-03	0.0002
U-238	4.751E-02	0.0027	4.456E-06	0.0000	0.000E+00	0.0000	3.941E-03	0.0002	3.966E-03	0.0002	1.931E-02	0.0011	2.626E-03	0.0002
Total	1.206E+01	0.6954	7.429E-04	0.0000	0.000E+00	0.0000	2.686E+00	0.1548	7.505E-01	0.0433	1.554E+00	0.0896	2.940E-01	0.0169

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.404E-02	0.0020
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.461E-01	0.0257
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-03	0.0001
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.933E-02	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.699E-02	0.0033
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.278E+00	0.1313
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.408E+01	0.8114
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.424E-02	0.0020
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E-01	0.0164
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.736E-02	0.0045
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E+01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.748E-03	0.0003	2.418E-05	0.0000	0.000E+00	0.0000	2.957E-03	0.0002	1.085E-03	0.0001	1.194E-04	0.0000	4.900E-03	0.0003
Cs-137	1.383E-10	0.0000	3.119E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
Np-237	1.454E-01	0.0080	1.258E-05	0.0000	0.000E+00	0.0000	3.243E-02	0.0018	1.289E-02	0.0007	2.165E-04	0.0000	2.715E-03	0.0001
Pu-238	1.996E-06	0.0000	4.492E-08	0.0000	0.000E+00	0.0000	6.711E-06	0.0000	4.957E-06	0.0000	4.078E-06	0.0000	9.495E-06	0.0000
Pu-239	1.615E-04	0.0000	1.256E-04	0.0000	0.000E+00	0.0000	1.530E-02	0.0008	1.123E-02	0.0006	3.100E-04	0.0000	2.545E-02	0.0014
Pu-240	6.735E-05	0.0000	1.163E-04	0.0000	0.000E+00	0.0000	1.416E-02	0.0008	1.040E-02	0.0006	2.874E-04	0.0000	2.355E-02	0.0013
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.242E+00	0.1233	1.353E-04	0.0000	0.000E+00	0.0000	7.237E-01	0.0398	3.364E-01	0.0185	4.372E-01	0.0240	1.101E-01	0.0061
Th-232	9.923E+00	0.5457	2.179E-04	0.0000	0.000E+00	0.0000	2.088E+00	0.1148	4.600E-01	0.0253	1.218E+00	0.0670	1.327E-01	0.0073
U-234	6.675E-03	0.0004	2.746E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0002	2.654E-03	0.0001	9.360E-03	0.0005	1.456E-03	0.0001
U-235	1.067E-01	0.0059	1.004E-05	0.0000	0.000E+00	0.0000	8.369E-03	0.0005	1.997E-02	0.0011	8.224E-03	0.0005	3.193E-03	0.0002
U-238	1.982E-02	0.0011	1.862E-06	0.0000	0.000E+00	0.0000	1.647E-03	0.0001	1.657E-03	0.0001	8.066E-03	0.0004	1.097E-03	0.0001
Total	1.245E+01	0.6847	6.465E-04	0.0000	0.000E+00	0.0000	2.890E+00	0.1589	8.563E-01	0.0471	1.682E+00	0.0925	3.052E-01	0.0168

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.483E-02	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-01	0.0107
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.728E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.258E-02	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.859E-02	0.0027
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.850E+00	0.2117
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E+01	0.7601
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-02	0.0013
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.0081
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.229E-02	0.0018
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.818E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-100 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Am-241	Np-237+D	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Am-241	U-233	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
Am-241	Th-229+D	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Am-241	ΣDSR(j)		7.811E-02	7.798E-02	7.188E-02	6.615E-02	3.404E-02	1.483E-02
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Np-237+D	Np-237+D	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237+D	U-233	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
Np-237+D	Th-229+D	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Np-237+D	ΣDSR(j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.937E-01
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	U-234	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
Pu-238	Th-230	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Pu-238	Ra-226+D	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Pu-238	Pb-210+D	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pu-238	ΣDSR(j)		6.127E-02	6.077E-02	4.085E-02	2.723E-02	1.074E-03	2.728E-05
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-239	U-235+D	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
Pu-239	Pa-231	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pu-239	Ac-227+D	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Pu-239	ΣDSR(j)		6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	U-236	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Pu-240	Th-232	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Pu-240	Ra-228+D	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Pu-240	Th-228+D	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Pu-240	ΣDSR(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	Ra-226+D	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Th-230	Pb-210+D	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Th-230	ΣDSR(j)		6.017E-02	6.406E-02	2.868E-01	5.346E-01	2.278E+00	3.850E+00

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-100 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	Ra-228+D	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-232	Th-228+D	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-232	∑DSR(j)		5.496E-01	1.606E+00	1.427E+01	1.428E+01	1.408E+01	1.382E+01
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
U-234	Pb-210+D	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
U-234	∑DSR(j)		7.230E-02	7.218E-02	6.631E-02	6.093E-02	3.424E-02	2.393E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.844E-01	1.465E-01
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238+D	U-238+D	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238+D	U-234	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
U-238+D	Pb-210+D	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
U-238+D	∑DSR(j)		1.854E-01	1.851E-01	1.699E-01	1.557E-01	7.736E-02	3.229E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-100 MREM.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	1.280E+03	1.282E+03	1.391E+03	1.512E+03	2.938E+03	6.741E+03
Cs-137	3.622E+01	3.708E+01	1.174E+02	3.807E+02	4.645E+06	5.956E+11
Np-237	9.729E+01	9.745E+01	1.058E+02	1.150E+02	2.242E+02	5.163E+02
Pu-238	1.632E+03	1.645E+03	2.448E+03	3.672E+03	9.308E+04	3.665E+06
Pu-239	1.493E+03	1.494E+03	1.512E+03	1.530E+03	1.685E+03	1.902E+03
Pu-240	1.496E+03	1.496E+03	1.520E+03	1.544E+03	1.755E+03	2.058E+03
Tc-99	4.189E+02	5.569E+02	7.065E+08	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	1.863E+01	2.677E+01	1.376E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	1.662E+03	1.561E+03	3.487E+02	1.871E+02	4.390E+01	2.597E+01
Th-232	1.819E+02	6.225E+01	7.007E+00	7.001E+00	7.104E+00	7.235E+00
U-234	1.383E+03	1.386E+03	1.508E+03	1.641E+03	2.921E+03	4.179E+03
U-235	1.645E+02	1.648E+02	1.783E+02	1.929E+02	3.517E+02	6.825E+02
U-238	5.394E+02	5.404E+02	5.887E+02	6.424E+02	1.293E+03	3.097E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	7.811E-02	1.280E+03	1.483E-02	6.741E+03
Cs-137	1.000E+00	0.000E+00	2.761E+00	3.622E+01	1.679E-10	5.956E+11
Np-237	1.000E+00	0.000E+00	1.028E+00	9.729E+01	1.937E-01	5.163E+02
Pu-238	1.000E+00	0.000E+00	6.127E-02	1.632E+03	2.728E-05	3.665E+06
Pu-239	1.000E+00	0.000E+00	6.696E-02	1.493E+03	5.258E-02	1.902E+03
Pu-240	1.000E+00	0.000E+00	6.685E-02	1.496E+03	4.859E-02	2.058E+03
Tc-99	1.000E+00	0.000E+00	2.387E-01	4.189E+02	0.000E+00	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.367E+00	1.863E+01	0.000E+00	*8.195E+14
Th-230	1.000E+00	1.000E+03	3.850E+00	2.597E+01	3.850E+00	2.597E+01
Th-232	1.000E+00	68.3 ± 0.1	1.430E+01	6.995E+00	1.382E+01	7.235E+00
U-234	1.000E+00	0.000E+00	7.230E-02	1.383E+03	2.393E-02	4.179E+03
U-235	1.000E+00	0.000E+00	6.078E-01	1.645E+02	1.465E-01	6.825E+02
U-238	1.000E+00	0.000E+00	1.854E-01	5.394E+02	3.229E-02	3.097E+03

*At specific activity limit

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-100 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Np-237	Am-241	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Np-237	Np-237	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237	ΣDOSE (j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.936E-01
U-233	Am-241	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
U-233	Np-237	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
U-233	ΣDOSE (j)		1.816E-07	5.165E-07	1.546E-05	2.824E-05	7.089E-05	6.023E-05
Th-229	Am-241	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Th-229	Np-237	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Th-229	ΣDOSE (j)		8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.693E-05	8.629E-05
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	ΣDOSE (j)		6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
U-234	Pu-238	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	U-238	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-234	ΣDOSE (j)		7.230E-02	7.218E-02	6.625E-02	6.071E-02	3.017E-02	1.258E-02
Th-230	Pu-238	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	ΣDOSE (j)		5.826E-02	5.826E-02	5.815E-02	5.805E-02	5.712E-02	5.590E-02
Ra-226	Pu-238	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Ra-226	Th-230	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Ra-226	U-234	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
Ra-226	U-238	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
Ra-226	ΣDOSE (j)		1.903E-03	5.744E-03	1.908E-01	3.732E-01	1.620E+00	2.746E+00
Pb-210	Pu-238	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pb-210	Th-230	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Pb-210	U-234	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
Pb-210	U-238	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
Pb-210	ΣDOSE (j)		9.109E-06	5.881E-05	3.788E-02	1.036E-01	6.051E-01	1.060E+00
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
U-235	Pu-239	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235	ΣDOSE (j)		6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-100 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pa-231	U-235	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Pa-231	ΣDOSE(j)		2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Ac-227	Pu-239	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Ac-227	ΣDOSE(j)		2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	ΣDOSE(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
U-236	Pu-240	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Th-232	Pu-240	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	ΣDOSE(j)		6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Ra-228	Pu-240	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Ra-228	Th-232	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Ra-228	ΣDOSE(j)		4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-228	Pu-240	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Th-228	Th-228	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-228	ΣDOSE(j)		5.409E+00	3.991E+00	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238	U-238	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238	ΣDOSE(j)		1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-100 MREM.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Resident Farmer Deterministic Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 2.57 seconds

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Resident Farmer

*The following summary report includes
the peak dose from cumulative
radionuclide inventory.*

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Summary : Wildlife Area Resident Farmer Deterministic Run

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Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(1)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(2)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(3)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(4)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(5)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(6)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(7)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(8)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(9)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(10)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(11)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(12)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(13)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(14)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(15)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(16)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(17)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(18)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(19)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(20)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(21)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(22)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(23)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(24)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(25)
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(26)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(27)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(28)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(29)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(30)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(31)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(32)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2(1)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2(2)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(3)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2(4)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2(5)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(6)
B-1	U-234	3.480E-02	3.478E-02	DCF2(7)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2(8)
B-1	U-238	2.960E-02	2.960E-02	DCF2(9)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(10)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(2)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3(3)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3(4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3(5)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(6)
D-1	U-234	1.810E-04	1.813E-04	DCF3(7)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(8)
D-1	U-238	1.670E-04	1.665E-04	DCF3(9)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(10)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(2,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(2,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(3,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(7,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(7,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(8,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(8,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(7,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(7,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(8,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(8,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	9.100E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): U-234	3.500E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	4.100E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	1.300E+02	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(9)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU (2, 1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (7)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (7, 1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (8)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (8, 1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (8)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (9)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (9, 1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU (1, 1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm*3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm*3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Summary : Wildlife Area Resident Farmer Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Resident Farmer Deterministic Run

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Cs-137	9.100E+00
Thickness:	0.15 meters	U-234	3.500E+02
Cover Depth:	0.00 meters	U-235	4.100E+01
		U-238	1.300E+02

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	9.945E+01	9.874E+01	7.603E+01	6.520E+01	3.370E+01	1.858E+01
M(t):	9.945E+01	9.874E+01	7.603E+01	6.520E+01	3.370E+01	1.858E+01

Maximum TDOSE(t): 9.945E+01 mrem/yr at t = 0.000E+00 years

Summary : Wildlife Area Resident Farmer Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.070E+01	0.2081	4.667E-07	0.0000	0.000E+00	0.0000	3.634E-01	0.0037	2.332E+00	0.0234	1.716E+00	0.0173	1.516E-02	0.0002
U-234	9.708E-02	0.0010	4.385E-03	0.0000	0.000E+00	0.0000	3.328E+00	0.0335	3.349E+00	0.0337	1.631E+01	0.1640	2.218E+00	0.0223
U-235	2.206E+01	0.2218	4.651E-04	0.0000	0.000E+00	0.0000	3.777E-01	0.0038	3.807E-01	0.0038	1.850E+00	0.0186	2.516E-01	0.0025
U-238	1.481E+01	0.1489	1.387E-03	0.0000	0.000E+00	0.0000	1.226E+00	0.0123	1.234E+00	0.0124	6.011E+00	0.0604	8.174E-01	0.0082
Total	5.766E+01	0.5798	6.238E-03	0.0001	0.000E+00	0.0000	5.295E+00	0.0532	7.296E+00	0.0734	2.589E+01	0.2603	3.302E+00	0.0332

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.512E+01	0.2526
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.531E+01	0.2545
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.492E+01	0.2506
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.410E+01	0.2423
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.945E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.021E+01	0.2047	4.558E-07	0.0000	0.000E+00	0.0000	3.550E-01	0.0036	2.278E+00	0.0231	1.676E+00	0.0170	1.481E-02	0.0001
U-234	9.692E-02	0.0010	4.378E-03	0.0000	0.000E+00	0.0000	3.322E+00	0.0336	3.343E+00	0.0339	1.628E+01	0.1649	2.214E+00	0.0224
U-235	2.202E+01	0.2230	4.645E-04	0.0000	0.000E+00	0.0000	3.775E-01	0.0038	3.819E-01	0.0039	1.847E+00	0.0187	2.513E-01	0.0025
U-238	1.478E+01	0.1497	1.384E-03	0.0000	0.000E+00	0.0000	1.224E+00	0.0124	1.232E+00	0.0125	6.001E+00	0.0608	8.160E-01	0.0083
Total	5.712E+01	0.5785	6.228E-03	0.0001	0.000E+00	0.0000	5.279E+00	0.0535	7.235E+00	0.0733	2.580E+01	0.2613	3.296E+00	0.0334

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.454E+01	0.2485
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.526E+01	0.2558
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.488E+01	0.2520
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.406E+01	0.2437
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.874E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	6.384E+00	0.0840	1.440E-07	0.0000	0.000E+00	0.0000	1.121E-01	0.0015	7.193E-01	0.0095	5.293E-01	0.0070	4.676E-03	0.0001
U-234	1.012E-01	0.0013	4.038E-03	0.0001	0.000E+00	0.0000	3.053E+00	0.0402	3.071E+00	0.0404	1.494E+01	0.1965	2.036E+00	0.0268
U-235	2.025E+01	0.2663	4.499E-04	0.0000	0.000E+00	0.0000	3.739E-01	0.0049	4.365E-01	0.0057	1.696E+00	0.0223	2.377E-01	0.0031
U-238	1.357E+01	0.1785	1.271E-03	0.0000	0.000E+00	0.0000	1.124E+00	0.0148	1.131E+00	0.0149	5.508E+00	0.0724	7.491E-01	0.0099
Total	4.030E+01	0.5301	5.759E-03	0.0001	0.000E+00	0.0000	4.663E+00	0.0613	5.358E+00	0.0705	2.268E+01	0.2982	3.028E+00	0.0398

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.749E+00	0.1019
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.321E+01	0.3052
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.299E+01	0.3024
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.208E+01	0.2904
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.603E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.969E+00	0.0302	4.441E-08	0.0000	0.000E+00	0.0000	3.458E-02	0.0005	2.219E-01	0.0034	1.633E-01	0.0025	1.442E-03	0.0000
U-234	1.279E-01	0.0020	3.719E-03	0.0001	0.000E+00	0.0000	2.808E+00	0.0431	2.819E+00	0.0432	1.370E+01	0.2100	1.870E+00	0.0287
U-235	1.861E+01	0.2854	4.478E-04	0.0000	0.000E+00	0.0000	3.738E-01	0.0057	4.868E-01	0.0075	1.556E+00	0.0239	2.273E-01	0.0035
U-238	1.243E+01	0.1907	1.165E-03	0.0000	0.000E+00	0.0000	1.030E+00	0.0158	1.037E+00	0.0159	5.048E+00	0.0774	6.865E-01	0.0105
Total	3.314E+01	0.5083	5.332E-03	0.0001	0.000E+00	0.0000	4.247E+00	0.0651	4.564E+00	0.0700	2.046E+01	0.3138	2.786E+00	0.0427

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.390E+00	0.0367
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.132E+01	0.3270
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.125E+01	0.3260
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.024E+01	0.3103
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.520E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-FWD.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.614E-04	0.0000	3.640E-12	0.0000	0.000E+00	0.0000	2.834E-06	0.0000	1.819E-05	0.0000	1.338E-05	0.0000	1.182E-07	0.0000
U-234	8.779E-01	0.0261	1.967E-03	0.0001	0.000E+00	0.0000	1.654E+00	0.0491	1.521E+00	0.0451	6.948E+00	0.2062	9.811E-01	0.0291
U-235	9.602E+00	0.2849	4.409E-04	0.0000	0.000E+00	0.0000	3.680E-01	0.0109	7.347E-01	0.0218	7.830E-01	0.0232	1.704E-01	0.0051
U-238	6.176E+00	0.1833	5.793E-04	0.0000	0.000E+00	0.0000	5.123E-01	0.0152	5.156E-01	0.0153	2.511E+00	0.0745	3.414E-01	0.0101
Total	1.666E+01	0.4943	2.988E-03	0.0001	0.000E+00	0.0000	2.534E+00	0.0752	2.771E+00	0.0822	1.024E+01	0.3039	1.493E+00	0.0443

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.959E-04	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.198E+01	0.3556
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.166E+01	0.3460
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.006E+01	0.2984
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.370E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-FWD.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.259E-09	0.0000	2.838E-17	0.0000	0.000E+00	0.0000	2.210E-11	0.0000	1.418E-10	0.0000	1.044E-10	0.0000	9.219E-13	0.0000
U-234	2.336E+00	0.1257	9.612E-04	0.0001	0.000E+00	0.0000	1.324E+00	0.0713	9.288E-01	0.0500	3.276E+00	0.1763	5.095E-01	0.0274
U-235	4.377E+00	0.2356	4.115E-04	0.0000	0.000E+00	0.0000	3.431E-01	0.0185	8.189E-01	0.0441	3.372E-01	0.0181	1.309E-01	0.0070
U-238	2.576E+00	0.1387	2.421E-04	0.0000	0.000E+00	0.0000	2.141E-01	0.0115	2.154E-01	0.0116	1.049E+00	0.0564	1.426E-01	0.0077
Total	9.289E+00	0.5000	1.615E-03	0.0001	0.000E+00	0.0000	1.881E+00	0.1013	1.963E+00	0.1057	4.662E+00	0.2509	7.830E-01	0.0421

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.528E-09	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.375E+00	0.4508
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.007E+00	0.3233
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.197E+00	0.2259
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.858E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
U-234	Pb-210+D	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
U-234	∑DSR(j)		7.230E-02	7.218E-02	6.631E-02	6.093E-02	3.424E-02	2.393E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.844E-01	1.465E-01
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238+D	U-238+D	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238+D	U-234	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
U-238+D	Pb-210+D	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
U-238+D	∑DSR(j)		1.854E-01	1.851E-01	1.699E-01	1.557E-01	7.736E-02	3.229E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t=	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137		3.622E-01	3.708E-01	1.174E+00	3.807E+00	4.645E+04	5.956E+09
U-234		1.383E+01	1.386E+01	1.508E+01	1.641E+01	2.921E+01	4.179E+01
U-235		1.645E+00	1.648E+00	1.783E+00	1.929E+00	3.517E+00	6.825E+00
U-238		5.394E+00	5.404E+00	5.887E+00	6.424E+00	1.293E+01	3.097E+01

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Cs-137	9.100E+00	0.000E+00	2.761E+00	3.622E-01	2.761E+00	3.622E-01
U-234	3.500E+02	0.000E+00	7.230E-02	1.383E+01	7.230E-02	1.383E+01
U-235	4.100E+01	0.000E+00	6.078E-01	1.645E+00	6.078E-01	1.645E+00

Summary : Wildlife Area Resident Farmer Deterministic Run

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U-238	1.300E+02	0.000E+00	1.854E-01	5.394E+00	1.854E-01	5.394E+00
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Summary : Wildlife Area Resident Farmer Deterministic Run

File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-FWD.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	2.512E+01	2.454E+01	7.749E+00	2.390E+00	1.959E-04	1.528E-09
U-234	U-234	1.000E+00	2.531E+01	2.526E+01	2.318E+01	2.124E+01	1.054E+01	4.389E+00
U-234	U-238	9.999E-01	1.332E-05	3.989E-05	1.233E-03	2.248E-03	5.558E-03	4.630E-03
U-234	ΣDOSE (j)		2.531E+01	2.526E+01	2.318E+01	2.124E+01	1.054E+01	4.394E+00
Th-230	U-234	1.000E+00	9.984E-05	2.844E-04	8.870E-03	1.688E-02	6.039E-02	8.414E-02
Th-230	U-238	9.999E-01	3.691E-11	2.398E-10	2.327E-07	8.683E-07	1.368E-05	3.231E-05
Th-230	ΣDOSE (j)		9.984E-05	2.844E-04	8.871E-03	1.688E-02	6.041E-02	8.417E-02
Ra-226	U-234	1.000E+00	1.986E-06	1.402E-05	1.483E-02	5.638E-02	1.022E+00	2.831E+00
Ra-226	U-238	9.999E-01	5.199E-13	7.877E-12	2.597E-07	1.943E-06	1.595E-04	7.838E-04
Ra-226	ΣDOSE (j)		1.986E-06	1.402E-05	1.483E-02	5.639E-02	1.022E+00	2.832E+00
Pb-210	U-234	1.000E+00	7.426E-09	1.022E-07	2.203E-03	1.264E-02	3.632E-01	1.071E+00
Pb-210	U-238	9.999E-01	1.608E-15	4.557E-14	3.101E-08	3.665E-07	5.384E-05	2.897E-04
Pb-210	ΣDOSE (j)		7.426E-09	1.022E-07	2.203E-03	1.264E-02	3.632E-01	1.072E+00
U-235	U-235	1.000E+00	2.492E+01	2.488E+01	2.283E+01	2.092E+01	1.039E+01	4.334E+00
Pa-231	U-235	1.000E+00	1.159E-03	3.649E-03	1.205E-01	2.285E-01	7.833E-01	1.023E+00
Ac-227	U-235	1.000E+00	1.118E-05	6.760E-05	3.959E-02	1.048E-01	4.825E-01	6.497E-01
U-238	U-238	5.400E-05	4.670E-04	4.661E-04	4.279E-04	3.920E-04	1.947E-04	8.122E-05
U-238	U-238	9.999E-01	2.410E+01	2.406E+01	2.208E+01	2.023E+01	1.005E+01	4.192E+00
U-238	ΣDOSE (j)		2.410E+01	2.406E+01	2.208E+01	2.023E+01	1.005E+01	4.192E+00

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Resident Farmer Deterministic Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	9.100E+00	8.888E+00	2.807E+00	8.658E-01	7.097E-05	5.534E-10
U-234	U-234	1.000E+00	3.500E+02	3.494E+02	3.206E+02	2.938E+02	1.458E+02	6.070E+01
U-234	U-238	9.999E-01	0.000E+00	3.679E-04	1.688E-02	3.093E-02	7.679E-02	6.401E-02
U-234	ΣS(j):		3.500E+02	3.494E+02	3.207E+02	2.938E+02	1.458E+02	6.077E+01
Th-230	U-234	1.000E+00	0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Th-230	U-238	9.999E-01	0.000E+00	1.657E-09	3.910E-06	1.475E-05	2.345E-04	5.542E-04
Th-230	ΣS(j):		0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Ra-226	U-234	1.000E+00	0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.186E-01
Ra-226	U-238	9.999E-01	0.000E+00	2.393E-13	2.841E-08	2.157E-07	1.792E-05	8.818E-05
Ra-226	ΣS(j):		0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.187E-01
Pb-210	U-234	1.000E+00	0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.012E-01
Pb-210	U-238	9.999E-01	0.000E+00	1.848E-15	8.373E-09	1.011E-07	1.510E-05	8.142E-05
Pb-210	ΣS(j):		0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.013E-01
U-235	U-235	1.000E+00	4.100E+01	4.093E+01	3.757E+01	3.442E+01	1.710E+01	7.131E+00
Pa-231	U-235	1.000E+00	0.000E+00	8.666E-04	4.129E-02	7.863E-02	2.705E-01	3.535E-01
Ac-227	U-235	1.000E+00	0.000E+00	1.365E-05	2.082E-02	5.574E-02	2.584E-01	3.482E-01
U-238	U-238	5.400E-05	7.020E-03	7.008E-03	6.432E-03	5.894E-03	2.928E-03	1.221E-03
U-238	U-238	9.999E-01	1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.421E+01	2.261E+01
U-238	ΣS(j):		1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.422E+01	2.261E+01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 0.96 seconds

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Recreational User

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 1 mrem/yr.

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Summary : Wildlife Area Recreational User Run

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Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.160E+00	2.072E+00	DCF2 (1)
B-1	Am-241	3.404E-01	3.404E-01	DCF2 (2)
B-1	Cs-137+D	1.554E-04	1.554E-04	DCF2 (3)
B-1	Np-237+D	1.739E-01	1.739E-01	DCF2 (4)
B-1	Pa-231	5.550E-01	5.550E-01	DCF2 (5)
B-1	Pb-210+D	4.111E-02	2.183E-02	DCF2 (6)
B-1	Pu-238	3.700E-01	3.700E-01	DCF2 (7)
B-1	Pu-239	4.070E-01	4.070E-01	DCF2 (9)
B-1	Pu-240	4.070E-01	4.070E-01	DCF2 (10)
B-1	Ra-226+D	3.712E-02	3.700E-02	DCF2 (12)
B-1	Ra-228+D	5.931E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	5.550E-05	5.550E-05	DCF2 (14)
B-1	Th-228+D	1.905E-01	1.739E-01	DCF2 (15)
B-1	Th-229+D	9.651E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.663E-01	3.663E-01	DCF2 (17)
B-1	Th-232	4.440E-01	4.440E-01	DCF2 (18)
B-1	U-233	4.070E-02	4.070E-02	DCF2 (19)
B-1	U-234	3.700E-02	3.700E-02	DCF2 (20)
B-1	U-235+D	3.404E-02	3.404E-02	DCF2 (21)
B-1	U-236	3.515E-02	3.515E-02	DCF2 (22)
B-1	U-238	3.219E-02	3.219E-02	DCF2 (23)
B-1	U-238+D	3.222E-02	3.219E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	5.865E-03	4.440E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.111E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.960E-03	2.960E-03	DCF3 (5)
D-1	Pb-210+D	1.296E-02	7.030E-03	DCF3 (6)
D-1	Pu-238	8.140E-04	8.140E-04	DCF3 (7)
D-1	Pu-239	8.880E-04	8.880E-04	DCF3 (9)
D-1	Pu-240	8.880E-04	8.880E-04	DCF3 (10)
D-1	Ra-226+D	5.551E-03	5.550E-03	DCF3 (12)
D-1	Ra-228+D	1.961E-02	1.961E-02	DCF3 (13)
D-1	Tc-99	3.034E-06	3.034E-06	DCF3 (14)

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	1.137E-03	3.478E-04	DCF3 (15)
D-1	Th-229+D	3.701E-03	1.961E-03	DCF3 (16)
D-1	Th-230	8.140E-04	8.140E-04	DCF3 (17)
D-1	Th-232	9.250E-04	9.250E-04	DCF3 (18)
D-1	U-233	2.886E-04	2.886E-04	DCF3 (19)
D-1	U-234	2.738E-04	2.738E-04	DCF3 (20)
D-1	U-235+D	2.606E-04	2.590E-04	DCF3 (21)
D-1	U-236	2.590E-04	2.590E-04	DCF3 (22)
D-1	U-238	2.479E-04	2.479E-04	DCF3 (23)
D-1	U-238+D	2.634E-04	2.479E-04	DCF3 (24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)
D-5				

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	1.200E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	1.000E+00	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Recreational User Run

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Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters
 Thickness: 0.15 meters
 Cover Depth: 0.00 meters

Am-241 1.000E+00
 Cs-137 1.000E+00
 Np-237 1.000E+00
 Pu-238 1.000E+00
 Pu-239 1.000E+00
 Pu-240 1.000E+00
 Tc-99 1.000E+00
 Th-228 1.000E+00
 Th-230 1.000E+00
 Th-232 1.000E+00
 U-234 1.000E+00
 U-235 1.000E+00
 U-238 1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	9.227E-01	8.280E-01	1.274E+00	1.233E+00	1.241E+00	1.282E+00
M(t):	9.227E-01	8.280E-01	1.274E+00	1.233E+00	1.241E+00	1.282E+00

Maximum TDOSE(t): 1.287E+00 mrem/yr at t = 35.08 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.508E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.735E-03	0.0021	4.401E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Cs-137	9.582E-02	0.0745	9.232E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.082E-05	0.0000
Np-237	7.000E-02	0.0544	2.248E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.131E-03	0.0009
Pu-238	6.899E-06	0.0000	3.803E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.781E-03	0.0014
Pu-239	1.959E-05	0.0000	5.535E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.571E-03	0.0020
Pu-240	8.810E-06	0.0000	5.520E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0020
Tc-99	3.134E-10	0.0000	2.829E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.291E-10	0.0000
Th-228	1.549E-06	0.0000	6.618E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.410E-09	0.0000
Th-230	1.072E-02	0.0083	5.028E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.847E-03	0.0022
Th-232	9.708E-01	0.7543	9.435E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.226E-02	0.0484
U-234	2.678E-05	0.0000	4.784E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.520E-04	0.0006
U-235	4.871E-02	0.0378	4.530E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-04	0.0006
U-238	1.030E-02	0.0080	4.154E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-04	0.0006
Total	1.209E+00	0.9395	3.732E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.745E-02	0.0602

Summary : Wildlife Area Recreational User Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.508E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.815E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.588E-02	0.0745
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.115E-02	0.0553
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.826E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.646E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.628E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.428E-10	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.361E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.033E+00	0.8028
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.836E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.944E-02	0.0384
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.287E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.899E-03	0.0031	4.666E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-03	0.0023
Cs-137	2.187E-01	0.2370	2.107E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-04	0.0002
Np-237	7.422E-02	0.0804	2.384E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.199E-03	0.0013
Pu-238	9.167E-06	0.0000	5.055E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.367E-03	0.0026
Pu-239	1.975E-05	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Pu-240	8.909E-06	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Tc-99	7.333E-06	0.0000	6.619E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.702E-06	0.0000
Th-228	5.129E-01	0.5559	2.192E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.785E-03	0.0030
Th-230	2.337E-04	0.0003	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.380E-03	0.0026
Th-232	2.599E-02	0.0282	6.155E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.039E-03	0.0065
U-234	2.667E-05	0.0000	5.071E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.988E-04	0.0009
U-235	5.174E-02	0.0561	4.667E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.602E-04	0.0008
U-238	1.095E-02	0.0119	4.417E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.686E-04	0.0008
Total	8.977E-01	0.9729	3.806E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.459E-02	0.0267

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.104E-03	0.0055
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.188E-01	0.2372
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.544E-02	0.0818
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.427E-03	0.0026
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.657E-03	0.0029
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.504E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.157E-01	0.5589
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.664E-03	0.0029
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-02	0.0348
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.305E-04	0.0009
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.250E-02	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.173E-02	0.0127
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.227E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.894E-03	0.0035	4.658E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.155E-03	0.0026
Cs-137	2.136E-01	0.2580	2.058E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.356E-04	0.0002
Np-237	7.410E-02	0.0895	2.380E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.197E-03	0.0014
Pu-238	9.093E-06	0.0000	5.014E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.348E-03	0.0028
Pu-239	1.975E-05	0.0000	5.581E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Pu-240	8.906E-06	0.0000	5.580E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Tc-99	5.505E-06	0.0000	4.969E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.782E-06	0.0000
Th-228	3.570E-01	0.4311	1.526E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-03	0.0023
Th-230	5.361E-04	0.0006	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.388E-03	0.0029
Th-232	8.692E-02	0.1050	6.328E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.227E-02	0.0148
U-234	2.663E-05	0.0000	5.063E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.974E-04	0.0010
U-235	5.165E-02	0.0624	4.660E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.591E-04	0.0009
U-238	1.093E-02	0.0132	4.409E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.673E-04	0.0009
Total	7.977E-01	0.9634	3.751E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.995E-02	0.0362

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.096E-03	0.0062
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.137E-01	0.2581
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.532E-02	0.0910
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.407E-03	0.0029
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0032
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.656E-03	0.0032
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.590E-01	0.4335
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.974E-03	0.0036
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.926E-02	0.1199
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.291E-04	0.0010
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.241E-02	0.0633
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.171E-02	0.0141
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.280E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.668E-03	0.0021	4.293E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-03	0.0016
Cs-137	6.745E-02	0.0529	6.499E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.282E-05	0.0000
Np-237	6.828E-02	0.0536	2.193E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-03	0.0009
Pu-238	6.114E-06	0.0000	3.369E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.578E-03	0.0012
Pu-239	1.952E-05	0.0000	5.515E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.561E-03	0.0020
Pu-240	8.768E-06	0.0000	5.494E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.552E-03	0.0020
Tc-99	4.339E-12	0.0000	3.916E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.557E-12	0.0000
Th-228	6.944E-09	0.0000	2.968E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.771E-11	0.0000
Th-230	1.510E-02	0.0118	5.030E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.122E-03	0.0024
Th-232	9.850E-01	0.7729	9.483E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.293E-02	0.0494
U-234	2.780E-05	0.0000	4.668E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.330E-04	0.0006
U-235	4.749E-02	0.0373	4.505E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.141E-04	0.0006
U-238	1.004E-02	0.0079	4.047E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.043E-04	0.0006
Total	1.196E+00	0.9385	3.670E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.803E-02	0.0612

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.698E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.750E-02	0.0530
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.940E-02	0.0545
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.618E-03	0.0013
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.636E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.899E-12	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.982E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.827E-02	0.0143
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E+00	0.8223
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.654E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-02	0.0378
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-02	0.0084
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.456E-03	0.0020	3.950E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.828E-03	0.0015
Cs-137	2.081E-02	0.0169	2.005E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-05	0.0000
Np-237	6.281E-02	0.0509	2.017E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-03	0.0008
Pu-238	4.079E-06	0.0000	2.246E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.052E-03	0.0009
Pu-239	1.928E-05	0.0000	5.449E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.531E-03	0.0021
Pu-240	8.630E-06	0.0000	5.407E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-03	0.0020
Tc-99	2.567E-18	0.0000	2.317E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.696E-18	0.0000
Th-228	9.403E-17	0.0000	4.018E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.106E-19	0.0000
Th-230	2.945E-02	0.0239	5.040E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.148E-03	0.0034
Th-232	9.861E-01	0.7998	9.476E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.296E-02	0.0511
U-234	3.513E-05	0.0000	4.298E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.731E-04	0.0005
U-235	4.365E-02	0.0354	4.469E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.783E-04	0.0006
U-238	9.196E-03	0.0075	3.709E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.454E-04	0.0005
Total	1.154E+00	0.9364	3.483E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.805E-02	0.0633

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.323E-03	0.0035
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.082E-02	0.0169
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.384E-02	0.0518
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.078E-03	0.0009
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.604E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.574E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.265E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.454E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.365E-02	0.0273
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E+00	0.8509
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.125E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.433E-02	0.0360
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.845E-03	0.0080
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.266E-03	0.0010	2.029E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.390E-04	0.0008
Cs-137	1.705E-06	0.0000	1.643E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-09	0.0000
Np-237	3.221E-02	0.0260	1.035E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.215E-04	0.0004
Pu-238	2.167E-07	0.0000	8.759E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.112E-05	0.0000
Pu-239	1.752E-05	0.0000	4.947E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-03	0.0019
Pu-240	7.596E-06	0.0000	4.759E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.210E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.274E-01	0.1027	5.100E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.170E-02	0.0094
Th-232	9.717E-01	0.7829	9.339E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.204E-02	0.0500
U-234	2.412E-04	0.0002	2.264E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.561E-04	0.0003
U-235	2.252E-02	0.0181	4.317E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-04	0.0004
U-238	4.568E-03	0.0037	1.845E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.210E-04	0.0003
Total	1.160E+00	0.9346	2.814E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.091E-02	0.0652

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.225E-03	0.0018
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.706E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.274E-02	0.0264
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.222E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-03	0.0019
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.265E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-01	0.1121
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E+00	0.8330
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.995E-04	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.301E-02	0.0185
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.891E-03	0.0039
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.241E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.527E-04	0.0004	8.825E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.084E-04	0.0003
Cs-137	1.330E-11	0.0000	1.281E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.442E-15	0.0000
Np-237	1.398E-02	0.0109	4.502E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-04	0.0002
Pu-238	1.919E-07	0.0000	1.561E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.880E-07	0.0000
Pu-239	1.553E-05	0.0000	4.383E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Pu-240	6.476E-06	0.0000	4.057E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.884E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.156E-01	0.1682	5.125E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-02	0.0144
Th-232	9.541E-01	0.7442	9.169E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.092E-02	0.0475
U-234	6.418E-04	0.0005	1.096E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.957E-04	0.0002
U-235	1.026E-02	0.0080	3.985E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-04	0.0003
U-238	1.906E-03	0.0015	7.709E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E-04	0.0001
Total	1.197E+00	0.9338	2.465E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.467E-02	0.0660

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.699E-04	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.331E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.421E-02	0.0111
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.955E-07	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.095E-03	0.0016
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.931E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.342E-01	0.1827
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E+00	0.7918
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.386E-04	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.062E-02	0.0083
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.282E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-1 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Am-241	Np-237+D	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Am-241	U-233	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
Am-241	Th-229+D	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Am-241	ΣDSR(j)		5.104E-03	5.096E-03	4.698E-03	4.323E-03	2.225E-03	9.699E-04
Cs-137+D	Cs-137+D	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Np-237+D	Np-237+D	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237+D	U-233	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
Np-237+D	Th-229+D	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Np-237+D	ΣDSR(j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	U-234	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
Pu-238	Th-230	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Pu-238	Ra-226+D	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Pu-238	Pb-210+D	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pu-238	ΣDSR(j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.222E-05	9.955E-07
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-239	U-235+D	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
Pu-239	Pa-231	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pu-239	Ac-227+D	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Pu-239	ΣDSR(j)		2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	U-236	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Pu-240	Th-232	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Pu-240	Ra-228+D	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Pu-240	Th-228+D	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Pu-240	ΣDSR(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	Ra-226+D	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Th-230	Pb-210+D	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Th-230	ΣDSR(j)		2.664E-03	2.974E-03	1.827E-02	3.365E-02	1.392E-01	2.342E-01

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-1 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	Ra-228+D	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-232	Th-228+D	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-232	ΣDSR(j)		3.209E-02	9.926E-02	1.048E+00	1.049E+00	1.034E+00	1.015E+00
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	Th-230	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
U-234	Ra-226+D	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
U-234	Pb-210+D	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
U-234	ΣDSR(j)		8.305E-04	8.291E-04	7.654E-04	7.125E-04	5.995E-04	8.386E-04
U-235+D	U-235+D	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235+D	Pa-231	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
U-235+D	Ac-227+D	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
U-235+D	ΣDSR(j)		5.250E-02	5.241E-02	4.821E-02	4.433E-02	2.301E-02	1.062E-02
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238+D	U-238+D	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238+D	U-234	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-238+D	Th-230	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
U-238+D	Ra-226+D	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
U-238+D	Pb-210+D	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
U-238+D	ΣDSR(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.041E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-1 MREM.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	1.959E+02	1.962E+02	2.129E+02	2.313E+02	4.494E+02	1.031E+03
Cs-137	4.570E+00	4.679E+00	1.482E+01	4.803E+01	5.860E+05	7.515E+10
Np-237	1.326E+01	1.328E+01	1.441E+01	1.566E+01	3.054E+01	7.035E+01
Pu-238	4.120E+02	4.154E+02	6.181E+02	9.273E+02	2.369E+04	1.005E+06
Pu-239	3.748E+02	3.749E+02	3.793E+02	3.840E+02	4.229E+02	4.773E+02
Pu-240	3.763E+02	3.764E+02	3.824E+02	3.885E+02	4.414E+02	5.178E+02
Tc-99	6.648E+04	8.856E+04	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	1.939E+00	2.786E+00	1.432E+08	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	3.753E+02	3.362E+02	5.473E+01	2.972E+01	7.186E+00	4.270E+00
Th-232	3.116E+01	1.008E+01	9.542E-01	9.532E-01	9.672E-01	9.851E-01
U-234	1.204E+03	1.206E+03	1.306E+03	1.404E+03	1.668E+03	1.192E+03
U-235	1.905E+01	1.908E+01	2.074E+01	2.256E+01	4.347E+01	9.416E+01
U-238	8.528E+01	8.542E+01	9.307E+01	1.016E+02	2.044E+02	4.901E+02

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 35.08 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	5.104E-03	1.959E+02	4.815E-03	2.077E+02
Cs-137	1.000E+00	0.000E+00	2.188E-01	4.570E+00	9.588E-02	1.043E+01
Np-237	1.000E+00	0.000E+00	7.544E-02	1.326E+01	7.115E-02	1.405E+01
Pu-238	1.000E+00	0.000E+00	2.427E-03	4.120E+02	1.826E-03	5.477E+02
Pu-239	1.000E+00	0.000E+00	2.668E-03	3.748E+02	2.646E-03	3.780E+02
Pu-240	1.000E+00	0.000E+00	2.657E-03	3.763E+02	2.628E-03	3.806E+02
Tc-99	1.000E+00	0.000E+00	1.504E-05	6.648E+04	6.428E-10	1.556E+09
Th-228	1.000E+00	0.000E+00	5.157E-01	1.939E+00	1.557E-06	6.422E+05
Th-230	1.000E+00	1.000E+03	2.342E-01	4.270E+00	1.361E-02	7.345E+01
Th-232	1.000E+00	68.6 ± 0.1	1.050E+00	9.524E-01	1.033E+00	9.679E-01
U-234	1.000E+00	1.000E+03	8.386E-04	1.192E+03	7.836E-04	1.276E+03
U-235	1.000E+00	0.000E+00	5.250E-02	1.905E+01	4.944E-02	2.023E+01
U-238	1.000E+00	0.000E+00	1.173E-02	8.528E+01	1.103E-02	9.067E+01

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-1 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Np-237	Am-241	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Np-237	Np-237	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237	ΣDOSE (j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
U-233	Am-241	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
U-233	Np-237	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
U-233	ΣDOSE (j)		2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.767E-07	7.450E-07
Th-229	Am-241	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Th-229	Np-237	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Th-229	ΣDOSE (j)		8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.401E-06	7.947E-06
Cs-137	Cs-137	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	ΣDOSE (j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
U-234	Pu-238	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	U-238	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-234	ΣDOSE (j)		8.305E-04	8.291E-04	7.611E-04	6.974E-04	3.465E-04	1.445E-04
Th-230	Pu-238	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	U-234	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
Th-230	U-238	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
Th-230	ΣDOSE (j)		2.510E-03	2.509E-03	2.505E-03	2.500E-03	2.460E-03	2.408E-03
Ra-226	Pu-238	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Ra-226	Th-230	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Ra-226	U-234	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
Ra-226	U-238	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
Ra-226	ΣDOSE (j)		1.548E-04	4.642E-04	1.536E-02	3.004E-02	1.304E-01	2.210E-01
Pb-210	Pu-238	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pb-210	Th-230	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Pb-210	U-234	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
Pb-210	U-238	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
Pb-210	ΣDOSE (j)		8.552E-08	5.932E-07	4.087E-04	1.119E-03	6.539E-03	1.146E-02
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
U-235	Pu-239	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
U-235	U-235	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235	ΣDOSE (j)		5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-1 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pa-231	U-235	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Pa-231	ΣDOSE(j)		2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Ac-227	Pu-239	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Ac-227	U-235	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Ac-227	ΣDOSE(j)		1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	ΣDOSE(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
U-236	Pu-240	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Th-232	Pu-240	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	ΣDOSE(j)		2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Ra-228	Pu-240	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Ra-228	Th-232	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Ra-228	ΣDOSE(j)		2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-228	Pu-240	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Th-228	Th-228	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-228	ΣDOSE(j)		5.197E-01	3.833E-01	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238	U-238	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238	ΣDOSE(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-1 MREM.RAD

Individual Nuclide Soil Concentration
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Recreational User Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.00 seconds

Recreational User

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 15 mrem/yr.

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Summary : Wildlife Area Recreational User Run

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Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.160E+00	2.072E+00	DCF2 (1)
B-1	Am-241	3.404E-01	3.404E-01	DCF2 (2)
B-1	Cs-137+D	1.554E-04	1.554E-04	DCF2 (3)
B-1	Np-237+D	1.739E-01	1.739E-01	DCF2 (4)
B-1	Pa-231	5.550E-01	5.550E-01	DCF2 (5)
B-1	Pb-210+D	4.111E-02	2.183E-02	DCF2 (6)
B-1	Pu-238	3.700E-01	3.700E-01	DCF2 (7)
B-1	Pu-239	4.070E-01	4.070E-01	DCF2 (9)
B-1	Pu-240	4.070E-01	4.070E-01	DCF2 (10)
B-1	Ra-226+D	3.712E-02	3.700E-02	DCF2 (12)
B-1	Ra-228+D	5.931E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	5.550E-05	5.550E-05	DCF2 (14)
B-1	Th-228+D	1.905E-01	1.739E-01	DCF2 (15)
B-1	Th-229+D	9.651E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.663E-01	3.663E-01	DCF2 (17)
B-1	Th-232	4.440E-01	4.440E-01	DCF2 (18)
B-1	U-233	4.070E-02	4.070E-02	DCF2 (19)
B-1	U-234	3.700E-02	3.700E-02	DCF2 (20)
B-1	U-235+D	3.404E-02	3.404E-02	DCF2 (21)
B-1	U-236	3.515E-02	3.515E-02	DCF2 (22)
B-1	U-238	3.219E-02	3.219E-02	DCF2 (23)
B-1	U-238+D	3.222E-02	3.219E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	5.865E-03	4.440E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.111E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.960E-03	2.960E-03	DCF3 (5)
D-1	Pb-210+D	1.296E-02	7.030E-03	DCF3 (6)
D-1	Pu-238	8.140E-04	8.140E-04	DCF3 (7)
D-1	Pu-239	8.880E-04	8.880E-04	DCF3 (9)
D-1	Pu-240	8.880E-04	8.880E-04	DCF3 (10)
D-1	Ra-226+D	5.551E-03	5.550E-03	DCF3 (12)
D-1	Ra-228+D	1.961E-02	1.961E-02	DCF3 (13)
D-1	Tc-99	3.034E-06	3.034E-06	DCF3 (14)

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	1.137E-03	3.478E-04	DCF3(15)
D-1	Th-229+D	3.701E-03	1.961E-03	DCF3(16)
D-1	Th-230	8.140E-04	8.140E-04	DCF3(17)
D-1	Th-232	9.250E-04	9.250E-04	DCF3(18)
D-1	U-233	2.886E-04	2.886E-04	DCF3(19)
D-1	U-234	2.738E-04	2.738E-04	DCF3(20)
D-1	U-235+D	2.606E-04	2.590E-04	DCF3(21)
D-1	U-236	2.590E-04	2.590E-04	DCF3(22)
D-1	U-238	2.479E-04	2.479E-04	DCF3(23)
D-1	U-238+D	2.634E-04	2.479E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	1.200E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	1.000E+00	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters
 Thickness: 0.15 meters
 Cover Depth: 0.00 meters

Am-241 1.000E+00
 Cs-137 1.000E+00
 Np-237 1.000E+00
 Pu-238 1.000E+00
 Pu-239 1.000E+00
 Pu-240 1.000E+00
 Tc-99 1.000E+00
 Th-228 1.000E+00
 Th-230 1.000E+00
 Th-232 1.000E+00
 U-234 1.000E+00
 U-235 1.000E+00
 U-238 1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	9.227E-01	8.280E-01	1.274E+00	1.233E+00	1.241E+00	1.282E+00
M(t):	6.151E-02	5.520E-02	8.496E-02	8.219E-02	8.274E-02	8.547E-02

Maximum TDOSE(t): 1.287E+00 mrem/yr at t = 35.08 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.508E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.735E-03	0.0021	4.401E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Cs-137	9.582E-02	0.0745	9.232E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.082E-05	0.0000
Np-237	7.000E-02	0.0544	2.248E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.131E-03	0.0009
Pu-238	6.899E-06	0.0000	3.803E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.781E-03	0.0014
Pu-239	1.959E-05	0.0000	5.535E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.571E-03	0.0020
Pu-240	8.810E-06	0.0000	5.520E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0020
Tc-99	3.134E-10	0.0000	2.829E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.291E-10	0.0000
Th-228	1.549E-06	0.0000	6.618E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.410E-09	0.0000
Th-230	1.072E-02	0.0083	5.028E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.847E-03	0.0022
Th-232	9.708E-01	0.7543	9.435E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.226E-02	0.0484
U-234	2.678E-05	0.0000	4.784E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.520E-04	0.0006
U-235	4.871E-02	0.0378	4.530E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-04	0.0006
U-238	1.030E-02	0.0080	4.154E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-04	0.0006
Total	1.209E+00	0.9395	3.732E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.745E-02	0.0602

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.508E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.815E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.588E-02	0.0745
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.115E-02	0.0553
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.826E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.646E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.628E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.428E-10	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.361E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.033E+00	0.8028
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.836E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.944E-02	0.0384
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.287E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.899E-03	0.0031	4.666E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-03	0.0023
Cs-137	2.187E-01	0.2370	2.107E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-04	0.0002
Np-237	7.422E-02	0.0804	2.384E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.199E-03	0.0013
Pu-238	9.167E-06	0.0000	5.055E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.367E-03	0.0026
Pu-239	1.975E-05	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Pu-240	8.909E-06	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Tc-99	7.333E-06	0.0000	6.619E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.702E-06	0.0000
Th-228	5.129E-01	0.5559	2.192E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.785E-03	0.0030
Th-230	2.337E-04	0.0003	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.380E-03	0.0026
Th-232	2.599E-02	0.0282	6.155E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.039E-03	0.0065
U-234	2.667E-05	0.0000	5.071E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.988E-04	0.0009
U-235	5.174E-02	0.0561	4.667E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.602E-04	0.0008
U-238	1.095E-02	0.0119	4.417E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.686E-04	0.0008
Total	8.977E-01	0.9729	3.806E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.459E-02	0.0267

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.104E-03	0.0055
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.188E-01	0.2372
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.544E-02	0.0818
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.427E-03	0.0026
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.657E-03	0.0029
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.504E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.157E-01	0.5589
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.664E-03	0.0029
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-02	0.0348
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.305E-04	0.0009
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.250E-02	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.173E-02	0.0127
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.227E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.894E-03	0.0035	4.658E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.155E-03	0.0026
Cs-137	2.136E-01	0.2580	2.058E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.356E-04	0.0002
Np-237	7.410E-02	0.0895	2.380E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.197E-03	0.0014
Pu-238	9.093E-06	0.0000	5.014E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.348E-03	0.0028
Pu-239	1.975E-05	0.0000	5.581E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Pu-240	8.906E-06	0.0000	5.580E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Tc-99	5.505E-06	0.0000	4.969E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.782E-06	0.0000
Th-228	3.570E-01	0.4311	1.526E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-03	0.0023
Th-230	5.361E-04	0.0006	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.388E-03	0.0029
Th-232	8.692E-02	0.1050	6.328E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.227E-02	0.0148
U-234	2.663E-05	0.0000	5.063E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.974E-04	0.0010
U-235	5.165E-02	0.0624	4.660E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.591E-04	0.0009
U-238	1.093E-02	0.0132	4.409E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.673E-04	0.0009
Total	7.977E-01	0.9634	3.751E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.995E-02	0.0362

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.096E-03	0.0062
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.137E-01	0.2581
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.532E-02	0.0910
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.407E-03	0.0029
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0032
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.656E-03	0.0032
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.590E-01	0.4335
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.974E-03	0.0036
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.926E-02	0.1199
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.291E-04	0.0010
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.241E-02	0.0633
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.171E-02	0.0141
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.280E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.668E-03	0.0021	4.293E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-03	0.0016
Cs-137	6.745E-02	0.0529	6.499E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.282E-05	0.0000
Np-237	6.828E-02	0.0536	2.193E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-03	0.0009
Pu-238	6.114E-06	0.0000	3.369E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.578E-03	0.0012
Pu-239	1.952E-05	0.0000	5.515E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.561E-03	0.0020
Pu-240	8.768E-06	0.0000	5.494E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.552E-03	0.0020
Tc-99	4.339E-12	0.0000	3.916E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.557E-12	0.0000
Th-228	6.944E-09	0.0000	2.968E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.771E-11	0.0000
Th-230	1.510E-02	0.0118	5.030E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.122E-03	0.0024
Th-232	9.850E-01	0.7729	9.483E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.293E-02	0.0494
U-234	2.780E-05	0.0000	4.668E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.330E-04	0.0006
U-235	4.749E-02	0.0373	4.505E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.141E-04	0.0006
U-238	1.004E-02	0.0079	4.047E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.043E-04	0.0006
Total	1.196E+00	0.9385	3.670E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.803E-02	0.0612

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.698E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.750E-02	0.0530
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.940E-02	0.0545
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.618E-03	0.0013
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.636E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.899E-12	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.982E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.827E-02	0.0143
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E+00	0.8223
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.654E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-02	0.0378
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-02	0.0084
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.456E-03	0.0020	3.950E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.828E-03	0.0015
Cs-137	2.081E-02	0.0169	2.005E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-05	0.0000
Np-237	6.281E-02	0.0509	2.017E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-03	0.0008
Pu-238	4.079E-06	0.0000	2.246E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.052E-03	0.0009
Pu-239	1.928E-05	0.0000	5.449E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.531E-03	0.0021
Pu-240	8.630E-06	0.0000	5.407E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-03	0.0020
Tc-99	2.567E-18	0.0000	2.317E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.696E-18	0.0000
Th-228	9.403E-17	0.0000	4.018E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.106E-19	0.0000
Th-230	2.945E-02	0.0239	5.040E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.148E-03	0.0034
Th-232	9.861E-01	0.7998	9.476E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.296E-02	0.0511
U-234	3.513E-05	0.0000	4.298E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.731E-04	0.0005
U-235	4.365E-02	0.0354	4.469E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.783E-04	0.0006
U-238	9.196E-03	0.0075	3.709E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.454E-04	0.0005
Total	1.154E+00	0.9364	3.483E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.805E-02	0.0633

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.323E-03	0.0035
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.082E-02	0.0169
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.384E-02	0.0518
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.078E-03	0.0009
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.604E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.574E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.265E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.454E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.365E-02	0.0273
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E+00	0.8509
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.125E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.433E-02	0.0360
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.845E-03	0.0080
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.266E-03	0.0010	2.029E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.390E-04	0.0008
Cs-137	1.705E-06	0.0000	1.643E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-09	0.0000
Np-237	3.221E-02	0.0260	1.035E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.215E-04	0.0004
Pu-238	2.167E-07	0.0000	8.759E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.112E-05	0.0000
Pu-239	1.752E-05	0.0000	4.947E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-03	0.0019
Pu-240	7.596E-06	0.0000	4.759E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.210E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.274E-01	0.1027	5.100E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.170E-02	0.0094
Th-232	9.717E-01	0.7829	9.339E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.204E-02	0.0500
U-234	2.412E-04	0.0002	2.264E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.561E-04	0.0003
U-235	2.252E-02	0.0181	4.317E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-04	0.0004
U-238	4.568E-03	0.0037	1.845E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.210E-04	0.0003
Total	1.160E+00	0.9346	2.814E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.091E-02	0.0652

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.225E-03	0.0018
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.706E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.274E-02	0.0264
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.222E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-03	0.0019
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.265E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-01	0.1121
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E+00	0.8330
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.995E-04	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.301E-02	0.0185
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.891E-03	0.0039
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.241E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.527E-04	0.0004	8.825E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.084E-04	0.0003
Cs-137	1.330E-11	0.0000	1.281E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.442E-15	0.0000
Np-237	1.398E-02	0.0109	4.502E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-04	0.0002
Pu-238	1.919E-07	0.0000	1.561E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.880E-07	0.0000
Pu-239	1.553E-05	0.0000	4.383E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Pu-240	6.476E-06	0.0000	4.057E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.884E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.156E-01	0.1682	5.125E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-02	0.0144
Th-232	9.541E-01	0.7442	9.169E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.092E-02	0.0475
U-234	6.418E-04	0.0005	1.096E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.957E-04	0.0002
U-235	1.026E-02	0.0080	3.985E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-04	0.0003
U-238	1.906E-03	0.0015	7.709E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E-04	0.0001
Total	1.197E+00	0.9338	2.465E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.467E-02	0.0660

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.699E-04	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.331E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.421E-02	0.0111
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.955E-07	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.095E-03	0.0016
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.931E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.342E-01	0.1827
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E+00	0.7918
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.386E-04	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.062E-02	0.0083
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.282E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Am-241	Np-237+D	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Am-241	U-233	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
Am-241	Th-229+D	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Am-241	ΣDSR(j)		5.104E-03	5.096E-03	4.698E-03	4.323E-03	2.225E-03	9.699E-04
Cs-137+D	Cs-137+D	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Np-237+D	Np-237+D	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237+D	U-233	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
Np-237+D	Th-229+D	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Np-237+D	ΣDSR(j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	U-234	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
Pu-238	Th-230	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Pu-238	Ra-226+D	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Pu-238	Pb-210+D	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pu-238	ΣDSR(j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.222E-05	9.955E-07
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-239	U-235+D	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
Pu-239	Pa-231	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pu-239	Ac-227+D	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Pu-239	ΣDSR(j)		2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	U-236	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Pu-240	Th-232	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Pu-240	Ra-228+D	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Pu-240	Th-228+D	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Pu-240	ΣDSR(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	Ra-226+D	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Th-230	Pb-210+D	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Th-230	ΣDSR(j)		2.664E-03	2.974E-03	1.827E-02	3.365E-02	1.392E-01	2.342E-01

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	Ra-228+D	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-232	Th-228+D	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-232	∑DSR(j)		3.209E-02	9.926E-02	1.048E+00	1.049E+00	1.034E+00	1.015E+00
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	Th-230	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
U-234	Ra-226+D	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
U-234	Pb-210+D	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
U-234	∑DSR(j)		8.305E-04	8.291E-04	7.654E-04	7.125E-04	5.995E-04	8.386E-04
U-235+D	U-235+D	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235+D	Pa-231	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
U-235+D	Ac-227+D	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
U-235+D	∑DSR(j)		5.250E-02	5.241E-02	4.821E-02	4.433E-02	2.301E-02	1.062E-02
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238+D	U-238+D	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238+D	U-234	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-238+D	Th-230	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
U-238+D	Ra-226+D	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
U-238+D	Pb-210+D	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
U-238+D	∑DSR(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.041E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	2.939E+03	2.944E+03	3.193E+03	3.470E+03	6.742E+03	1.547E+04
Cs-137	6.855E+01	7.018E+01	2.222E+02	7.204E+02	8.790E+06	1.127E+12
Np-237	1.988E+02	1.992E+02	2.161E+02	2.350E+02	4.581E+02	1.055E+03
Pu-238	6.181E+03	6.231E+03	9.272E+03	1.391E+04	3.553E+05	1.507E+07
Pu-239	5.622E+03	5.623E+03	5.690E+03	5.759E+03	6.344E+03	7.160E+03
Pu-240	5.645E+03	5.647E+03	5.736E+03	5.828E+03	6.621E+03	7.766E+03
Tc-99	9.972E+05	1.328E+06	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	2.909E+01	4.179E+01	2.148E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	5.630E+03	5.043E+03	8.209E+02	4.458E+02	1.078E+02	6.405E+01
Th-232	4.674E+02	1.511E+02	1.431E+01	1.430E+01	1.451E+01	1.478E+01
U-234	1.806E+04	1.809E+04	1.960E+04	2.105E+04	2.502E+04	1.789E+04
U-235	2.857E+02	2.862E+02	3.112E+02	3.384E+02	6.520E+02	1.412E+03
U-238	1.279E+03	1.281E+03	1.396E+03	1.524E+03	3.067E+03	7.351E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 35.08 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	5.104E-03	2.939E+03	4.815E-03	3.115E+03
Cs-137	1.000E+00	0.000E+00	2.188E-01	6.855E+01	9.588E-02	1.564E+02
Np-237	1.000E+00	0.000E+00	7.544E-02	1.988E+02	7.115E-02	2.108E+02
Pu-238	1.000E+00	0.000E+00	2.427E-03	6.181E+03	1.826E-03	8.215E+03
Pu-239	1.000E+00	0.000E+00	2.668E-03	5.622E+03	2.646E-03	5.670E+03
Pu-240	1.000E+00	0.000E+00	2.657E-03	5.645E+03	2.628E-03	5.708E+03
Tc-99	1.000E+00	0.000E+00	1.504E-05	9.972E+05	6.428E-10	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.157E-01	2.909E+01	1.557E-06	9.634E+06
Th-230	1.000E+00	1.000E+03	2.342E-01	6.405E+01	1.361E-02	1.102E+03
Th-232	1.000E+00	68.6 ± 0.1	1.050E+00	1.429E+01	1.033E+00	1.452E+01
U-234	1.000E+00	1.000E+03	8.386E-04	1.789E+04	7.836E-04	1.914E+04
U-235	1.000E+00	0.000E+00	5.250E-02	2.857E+02	4.944E-02	3.034E+02
U-238	1.000E+00	0.000E+00	1.173E-02	1.279E+03	1.103E-02	1.360E+03

*At specific activity limit

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Np-237	Am-241	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Np-237	Np-237	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237	ΣDOSE (j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
U-233	Am-241	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
U-233	Np-237	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
U-233	ΣDOSE (j)		2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.767E-07	7.450E-07
Th-229	Am-241	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Th-229	Np-237	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Th-229	ΣDOSE (j)		8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.401E-06	7.947E-06
Cs-137	Cs-137	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	ΣDOSE (j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
U-234	Pu-238	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	U-238	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-234	ΣDOSE (j)		8.305E-04	8.291E-04	7.611E-04	6.974E-04	3.465E-04	1.445E-04
Th-230	Pu-238	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	U-234	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
Th-230	U-238	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
Th-230	ΣDOSE (j)		2.510E-03	2.509E-03	2.505E-03	2.500E-03	2.460E-03	2.408E-03
Ra-226	Pu-238	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Ra-226	Th-230	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Ra-226	U-234	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
Ra-226	U-238	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
Ra-226	ΣDOSE (j)		1.548E-04	4.642E-04	1.536E-02	3.004E-02	1.304E-01	2.210E-01
Pb-210	Pu-238	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pb-210	Th-230	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Pb-210	U-234	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
Pb-210	U-238	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
Pb-210	ΣDOSE (j)		8.552E-08	5.932E-07	4.087E-04	1.119E-03	6.539E-03	1.146E-02
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
U-235	Pu-239	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
U-235	U-235	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235	ΣDOSE (j)		5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pa-231	U-235	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Pa-231	ΣDOSE(j)		2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Ac-227	Pu-239	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Ac-227	U-235	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Ac-227	ΣDOSE(j)		1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	ΣDOSE(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
U-236	Pu-240	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Th-232	Pu-240	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	ΣDOSE(j)		2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Ra-228	Pu-240	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Ra-228	Th-232	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Ra-228	ΣDOSE(j)		2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-228	Pu-240	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Th-228	Th-228	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-228	ΣDOSE(j)		5.197E-01	3.833E-01	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238	U-238	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238	ΣDOSE(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-15 MREM.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 0.99 seconds

Recreational User

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 25 mrem/yr.

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Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.160E+00	2.072E+00	DCF2 (1)
B-1	Am-241	3.404E-01	3.404E-01	DCF2 (2)
B-1	Cs-137+D	1.554E-04	1.554E-04	DCF2 (3)
B-1	Np-237+D	1.739E-01	1.739E-01	DCF2 (4)
B-1	Pa-231	5.550E-01	5.550E-01	DCF2 (5)
B-1	Pb-210+D	4.111E-02	2.183E-02	DCF2 (6)
B-1	Pu-238	3.700E-01	3.700E-01	DCF2 (7)
B-1	Pu-239	4.070E-01	4.070E-01	DCF2 (9)
B-1	Pu-240	4.070E-01	4.070E-01	DCF2 (10)
B-1	Ra-226+D	3.712E-02	3.700E-02	DCF2 (12)
B-1	Ra-228+D	5.931E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	5.550E-05	5.550E-05	DCF2 (14)
B-1	Th-228+D	1.905E-01	1.739E-01	DCF2 (15)
B-1	Th-229+D	9.651E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.663E-01	3.663E-01	DCF2 (17)
B-1	Th-232	4.440E-01	4.440E-01	DCF2 (18)
B-1	U-233	4.070E-02	4.070E-02	DCF2 (19)
B-1	U-234	3.700E-02	3.700E-02	DCF2 (20)
B-1	U-235+D	3.404E-02	3.404E-02	DCF2 (21)
B-1	U-236	3.515E-02	3.515E-02	DCF2 (22)
B-1	U-238	3.219E-02	3.219E-02	DCF2 (23)
B-1	U-238+D	3.222E-02	3.219E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	5.865E-03	4.440E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.111E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.960E-03	2.960E-03	DCF3 (5)
D-1	Pb-210+D	1.296E-02	7.030E-03	DCF3 (6)
D-1	Pu-238	8.140E-04	8.140E-04	DCF3 (7)
D-1	Pu-239	8.880E-04	8.880E-04	DCF3 (9)
D-1	Pu-240	8.880E-04	8.880E-04	DCF3 (10)
D-1	Ra-226+D	5.551E-03	5.550E-03	DCF3 (12)
D-1	Ra-228+D	1.961E-02	1.961E-02	DCF3 (13)
D-1	Tc-99	3.034E-06	3.034E-06	DCF3 (14)

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	1.137E-03	3.478E-04	DCF3(15)
D-1	Th-229+D	3.701E-03	1.961E-03	DCF3(16)
D-1	Th-230	8.140E-04	8.140E-04	DCF3(17)
D-1	Th-232	9.250E-04	9.250E-04	DCF3(18)
D-1	U-233	2.886E-04	2.886E-04	DCF3(19)
D-1	U-234	2.738E-04	2.738E-04	DCF3(20)
D-1	U-235+D	2.606E-04	2.590E-04	DCF3(21)
D-1	U-236	2.590E-04	2.590E-04	DCF3(22)
D-1	U-238	2.479E-04	2.479E-04	DCF3(23)
D-1	U-238+D	2.634E-04	2.479E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	1.200E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	1.000E+00	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Recreational User Run

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Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters
 Thickness: 0.15 meters
 Cover Depth: 0.00 meters

Am-241 1.000E+00
 Cs-137 1.000E+00
 Np-237 1.000E+00
 Pu-238 1.000E+00
 Pu-239 1.000E+00
 Pu-240 1.000E+00
 Tc-99 1.000E+00
 Th-228 1.000E+00
 Th-230 1.000E+00
 Th-232 1.000E+00
 U-234 1.000E+00
 U-235 1.000E+00
 U-238 1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	9.227E-01	8.280E-01	1.274E+00	1.233E+00	1.241E+00	1.282E+00
M(t):	3.691E-02	3.312E-02	5.098E-02	4.932E-02	4.965E-02	5.128E-02

Maximum TDOSE(t): 1.287E+00 mrem/yr at t = 35.08 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.508E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.735E-03	0.0021	4.401E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Cs-137	9.582E-02	0.0745	9.232E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.082E-05	0.0000
Np-237	7.000E-02	0.0544	2.248E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.131E-03	0.0009
Pu-238	6.899E-06	0.0000	3.803E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.781E-03	0.0014
Pu-239	1.959E-05	0.0000	5.535E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.571E-03	0.0020
Pu-240	8.810E-06	0.0000	5.520E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0020
Tc-99	3.134E-10	0.0000	2.829E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.291E-10	0.0000
Th-228	1.549E-06	0.0000	6.618E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.410E-09	0.0000
Th-230	1.072E-02	0.0083	5.028E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.847E-03	0.0022
Th-232	9.708E-01	0.7543	9.435E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.226E-02	0.0484
U-234	2.678E-05	0.0000	4.784E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.520E-04	0.0006
U-235	4.871E-02	0.0378	4.530E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-04	0.0006
U-238	1.030E-02	0.0080	4.154E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-04	0.0006
Total	1.209E+00	0.9395	3.732E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.745E-02	0.0602

Summary : Wildlife Area Recreational User Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.508E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.815E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.588E-02	0.0745
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.115E-02	0.0553
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.826E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.646E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.628E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.428E-10	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.361E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.033E+00	0.8028
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.836E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.944E-02	0.0384
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.287E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.899E-03	0.0031	4.666E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-03	0.0023
Cs-137	2.187E-01	0.2370	2.107E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-04	0.0002
Np-237	7.422E-02	0.0804	2.384E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.199E-03	0.0013
Pu-238	9.167E-06	0.0000	5.055E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.367E-03	0.0026
Pu-239	1.975E-05	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Pu-240	8.909E-06	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Tc-99	7.333E-06	0.0000	6.619E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.702E-06	0.0000
Th-228	5.129E-01	0.5559	2.192E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.785E-03	0.0030
Th-230	2.337E-04	0.0003	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.380E-03	0.0026
Th-232	2.599E-02	0.0282	6.155E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.039E-03	0.0065
U-234	2.667E-05	0.0000	5.071E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.988E-04	0.0009
U-235	5.174E-02	0.0561	4.667E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.602E-04	0.0008
U-238	1.095E-02	0.0119	4.417E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.686E-04	0.0008
Total	8.977E-01	0.9729	3.806E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.459E-02	0.0267

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.104E-03	0.0055
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.188E-01	0.2372
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.544E-02	0.0818
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.427E-03	0.0026
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.657E-03	0.0029
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.504E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.157E-01	0.5589
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.664E-03	0.0029
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-02	0.0348
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.305E-04	0.0009
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.250E-02	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.173E-02	0.0127
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.227E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.894E-03	0.0035	4.658E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.155E-03	0.0026
Cs-137	2.136E-01	0.2580	2.058E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.356E-04	0.0002
Np-237	7.410E-02	0.0895	2.380E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.197E-03	0.0014
Pu-238	9.093E-06	0.0000	5.014E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.348E-03	0.0028
Pu-239	1.975E-05	0.0000	5.581E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Pu-240	8.906E-06	0.0000	5.580E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Tc-99	5.505E-06	0.0000	4.969E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.782E-06	0.0000
Th-228	3.570E-01	0.4311	1.526E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-03	0.0023
Th-230	5.361E-04	0.0006	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.388E-03	0.0029
Th-232	8.692E-02	0.1050	6.328E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.227E-02	0.0148
U-234	2.663E-05	0.0000	5.063E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.974E-04	0.0010
U-235	5.165E-02	0.0624	4.660E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.591E-04	0.0009
U-238	1.093E-02	0.0132	4.409E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.673E-04	0.0009
Total	7.977E-01	0.9634	3.751E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.995E-02	0.0362

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.096E-03	0.0062
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.137E-01	0.2581
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.532E-02	0.0910
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.407E-03	0.0029
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0032
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.656E-03	0.0032
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.590E-01	0.4335
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.974E-03	0.0036
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.926E-02	0.1199
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.291E-04	0.0010
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.241E-02	0.0633
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.171E-02	0.0141
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.280E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.668E-03	0.0021	4.293E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-03	0.0016
Cs-137	6.745E-02	0.0529	6.499E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.282E-05	0.0000
Np-237	6.828E-02	0.0536	2.193E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-03	0.0009
Pu-238	6.114E-06	0.0000	3.369E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.578E-03	0.0012
Pu-239	1.952E-05	0.0000	5.515E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.561E-03	0.0020
Pu-240	8.768E-06	0.0000	5.494E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.552E-03	0.0020
Tc-99	4.339E-12	0.0000	3.916E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.557E-12	0.0000
Th-228	6.944E-09	0.0000	2.968E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.771E-11	0.0000
Th-230	1.510E-02	0.0118	5.030E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.122E-03	0.0024
Th-232	9.850E-01	0.7729	9.483E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.293E-02	0.0494
U-234	2.780E-05	0.0000	4.668E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.330E-04	0.0006
U-235	4.749E-02	0.0373	4.505E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.141E-04	0.0006
U-238	1.004E-02	0.0079	4.047E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.043E-04	0.0006
Total	1.196E+00	0.9385	3.670E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.803E-02	0.0612

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.698E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.750E-02	0.0530
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.940E-02	0.0545
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.618E-03	0.0013
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.636E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.899E-12	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.982E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.827E-02	0.0143
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E+00	0.8223
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.654E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-02	0.0378
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-02	0.0084
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.456E-03	0.0020	3.950E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.828E-03	0.0015
Cs-137	2.081E-02	0.0169	2.005E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-05	0.0000
Np-237	6.281E-02	0.0509	2.017E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-03	0.0008
Pu-238	4.079E-06	0.0000	2.246E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.052E-03	0.0009
Pu-239	1.928E-05	0.0000	5.449E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.531E-03	0.0021
Pu-240	8.630E-06	0.0000	5.407E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-03	0.0020
Tc-99	2.567E-18	0.0000	2.317E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.696E-18	0.0000
Th-228	9.403E-17	0.0000	4.018E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.106E-19	0.0000
Th-230	2.945E-02	0.0239	5.040E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.148E-03	0.0034
Th-232	9.861E-01	0.7998	9.476E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.296E-02	0.0511
U-234	3.513E-05	0.0000	4.298E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.731E-04	0.0005
U-235	4.365E-02	0.0354	4.469E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.783E-04	0.0006
U-238	9.196E-03	0.0075	3.709E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.454E-04	0.0005
Total	1.154E+00	0.9364	3.483E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.805E-02	0.0633

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.323E-03	0.0035
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.082E-02	0.0169
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.384E-02	0.0518
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.078E-03	0.0009
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.604E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.574E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.265E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.454E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.365E-02	0.0273
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E+00	0.8509
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.125E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.433E-02	0.0360
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.845E-03	0.0080
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.266E-03	0.0010	2.029E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.390E-04	0.0008
Cs-137	1.705E-06	0.0000	1.643E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-09	0.0000
Np-237	3.221E-02	0.0260	1.035E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.215E-04	0.0004
Pu-238	2.167E-07	0.0000	8.759E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.112E-05	0.0000
Pu-239	1.752E-05	0.0000	4.947E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-03	0.0019
Pu-240	7.596E-06	0.0000	4.759E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.210E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.274E-01	0.1027	5.100E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.170E-02	0.0094
Th-232	9.717E-01	0.7829	9.339E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.204E-02	0.0500
U-234	2.412E-04	0.0002	2.264E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.561E-04	0.0003
U-235	2.252E-02	0.0181	4.317E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-04	0.0004
U-238	4.568E-03	0.0037	1.845E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.210E-04	0.0003
Total	1.160E+00	0.9346	2.814E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.091E-02	0.0652

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.225E-03	0.0018
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.706E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.274E-02	0.0264
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.222E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-03	0.0019
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.265E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-01	0.1121
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E+00	0.8330
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.995E-04	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.301E-02	0.0185
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.891E-03	0.0039
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.241E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.527E-04	0.0004	8.825E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.084E-04	0.0003
Cs-137	1.330E-11	0.0000	1.281E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.442E-15	0.0000
Np-237	1.398E-02	0.0109	4.502E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-04	0.0002
Pu-238	1.919E-07	0.0000	1.561E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.880E-07	0.0000
Pu-239	1.553E-05	0.0000	4.383E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Pu-240	6.476E-06	0.0000	4.057E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.884E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.156E-01	0.1682	5.125E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-02	0.0144
Th-232	9.541E-01	0.7442	9.169E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.092E-02	0.0475
U-234	6.418E-04	0.0005	1.096E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.957E-04	0.0002
U-235	1.026E-02	0.0080	3.985E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-04	0.0003
U-238	1.906E-03	0.0015	7.709E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E-04	0.0001
Total	1.197E+00	0.9338	2.465E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.467E-02	0.0660

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.699E-04	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.331E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.421E-02	0.0111
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.955E-07	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.095E-03	0.0016
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.931E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.342E-01	0.1827
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E+00	0.7918
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.386E-04	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.062E-02	0.0083
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.282E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-25 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Am-241	Np-237+D	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Am-241	U-233	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
Am-241	Th-229+D	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Am-241	ΣDSR(j)		5.104E-03	5.096E-03	4.698E-03	4.323E-03	2.225E-03	9.699E-04
Cs-137+D	Cs-137+D	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Np-237+D	Np-237+D	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237+D	U-233	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
Np-237+D	Th-229+D	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Np-237+D	ΣDSR(j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	U-234	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
Pu-238	Th-230	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Pu-238	Ra-226+D	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Pu-238	Pb-210+D	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pu-238	ΣDSR(j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.222E-05	9.955E-07
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-239	U-235+D	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
Pu-239	Pa-231	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pu-239	Ac-227+D	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Pu-239	ΣDSR(j)		2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	U-236	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Pu-240	Th-232	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Pu-240	Ra-228+D	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Pu-240	Th-228+D	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Pu-240	ΣDSR(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	Ra-226+D	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Th-230	Pb-210+D	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Th-230	ΣDSR(j)		2.664E-03	2.974E-03	1.827E-02	3.365E-02	1.392E-01	2.342E-01

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-25 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	Ra-228+D	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-232	Th-228+D	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-232	ΣDSR(j)		3.209E-02	9.926E-02	1.048E+00	1.049E+00	1.034E+00	1.015E+00
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	Th-230	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
U-234	Ra-226+D	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
U-234	Pb-210+D	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
U-234	ΣDSR(j)		8.305E-04	8.291E-04	7.654E-04	7.125E-04	5.995E-04	8.386E-04
U-235+D	U-235+D	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235+D	Pa-231	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
U-235+D	Ac-227+D	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
U-235+D	ΣDSR(j)		5.250E-02	5.241E-02	4.821E-02	4.433E-02	2.301E-02	1.062E-02
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238+D	U-238+D	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238+D	U-234	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-238+D	Th-230	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
U-238+D	Ra-226+D	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
U-238+D	Pb-210+D	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
U-238+D	ΣDSR(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.041E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-25 MREM.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	4.898E+03	4.906E+03	5.322E+03	5.783E+03	1.124E+04	2.578E+04
Cs-137	1.142E+02	1.170E+02	3.704E+02	1.201E+03	1.465E+07	1.879E+12
Np-237	3.314E+02	3.319E+02	3.602E+02	3.916E+02	7.635E+02	1.759E+03
Pu-238	1.030E+04	1.038E+04	1.545E+04	2.318E+04	5.922E+05	2.511E+07
Pu-239	9.370E+03	9.372E+03	9.484E+03	9.599E+03	1.057E+04	1.193E+04
Pu-240	9.408E+03	9.411E+03	9.559E+03	9.713E+03	1.104E+04	1.294E+04
Tc-99	1.662E+06	2.214E+06	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	4.848E+01	6.965E+01	3.580E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	9.383E+03	8.406E+03	1.368E+03	7.430E+02	1.796E+02	1.067E+02
Th-232	7.791E+02	2.519E+02	2.386E+01	2.383E+01	2.418E+01	2.463E+01
U-234	3.010E+04	3.015E+04	3.266E+04	3.509E+04	4.170E+04	2.981E+04
U-235	4.762E+02	4.770E+02	5.186E+02	5.640E+02	1.087E+03	2.354E+03
U-238	2.132E+03	2.136E+03	2.327E+03	2.539E+03	5.111E+03	1.225E+04

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 35.08 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	5.104E-03	4.898E+03	4.815E-03	5.192E+03
Cs-137	1.000E+00	0.000E+00	2.188E-01	1.142E+02	9.588E-02	2.607E+02
Np-237	1.000E+00	0.000E+00	7.544E-02	3.314E+02	7.115E-02	3.514E+02
Pu-238	1.000E+00	0.000E+00	2.427E-03	1.030E+04	1.826E-03	1.369E+04
Pu-239	1.000E+00	0.000E+00	2.668E-03	9.370E+03	2.646E-03	9.449E+03
Pu-240	1.000E+00	0.000E+00	2.657E-03	9.408E+03	2.628E-03	9.514E+03
Tc-99	1.000E+00	0.000E+00	1.504E-05	1.662E+06	6.428E-10	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.157E-01	4.848E+01	1.557E-06	1.606E+07
Th-230	1.000E+00	1.000E+03	2.342E-01	1.067E+02	1.361E-02	1.836E+03
Th-232	1.000E+00	68.6 ± 0.1	1.050E+00	2.381E+01	1.033E+00	2.420E+01
U-234	1.000E+00	1.000E+03	8.386E-04	2.981E+04	7.836E-04	3.191E+04
U-235	1.000E+00	0.000E+00	5.250E-02	4.762E+02	4.944E-02	5.057E+02
U-238	1.000E+00	0.000E+00	1.173E-02	2.132E+03	1.103E-02	2.267E+03

*At specific activity limit

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-25 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Np-237	Am-241	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Np-237	Np-237	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237	∑DOSE (j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
U-233	Am-241	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
U-233	Np-237	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
U-233	∑DOSE (j)		2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.767E-07	7.450E-07
Th-229	Am-241	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Th-229	Np-237	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Th-229	∑DOSE (j)		8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.401E-06	7.947E-06
Cs-137	Cs-137	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	∑DOSE (j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
U-234	Pu-238	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	U-238	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-234	∑DOSE (j)		8.305E-04	8.291E-04	7.611E-04	6.974E-04	3.465E-04	1.445E-04
Th-230	Pu-238	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	U-234	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
Th-230	U-238	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
Th-230	∑DOSE (j)		2.510E-03	2.509E-03	2.505E-03	2.500E-03	2.460E-03	2.408E-03
Ra-226	Pu-238	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Ra-226	Th-230	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Ra-226	U-234	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
Ra-226	U-238	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
Ra-226	∑DOSE (j)		1.548E-04	4.642E-04	1.536E-02	3.004E-02	1.304E-01	2.210E-01
Pb-210	Pu-238	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pb-210	Th-230	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Pb-210	U-234	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
Pb-210	U-238	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
Pb-210	∑DOSE (j)		8.552E-08	5.932E-07	4.087E-04	1.119E-03	6.539E-03	1.146E-02
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
U-235	Pu-239	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
U-235	U-235	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235	∑DOSE (j)		5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-25 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pa-231	U-235	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Pa-231	ΣDOSE(j)		2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Ac-227	Pu-239	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Ac-227	U-235	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Ac-227	ΣDOSE(j)		1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	ΣDOSE(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
U-236	Pu-240	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Th-232	Pu-240	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	ΣDOSE(j)		2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Ra-228	Pu-240	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Ra-228	Th-232	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Ra-228	ΣDOSE(j)		2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-228	Pu-240	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Th-228	Th-228	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-228	ΣDOSE(j)		5.197E-01	3.833E-01	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238	U-238	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238	ΣDOSE(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Recreational User Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Recreational User Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.00 seconds

Recreational User

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 100 mrem/yr.

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Summary : Wildlife Area Recreational User Run

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Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.160E+00	2.072E+00	DCF2 (1)
B-1	Am-241	3.404E-01	3.404E-01	DCF2 (2)
B-1	Cs-137+D	1.554E-04	1.554E-04	DCF2 (3)
B-1	Np-237+D	1.739E-01	1.739E-01	DCF2 (4)
B-1	Pa-231	5.550E-01	5.550E-01	DCF2 (5)
B-1	Pb-210+D	4.111E-02	2.183E-02	DCF2 (6)
B-1	Pu-238	3.700E-01	3.700E-01	DCF2 (7)
B-1	Pu-239	4.070E-01	4.070E-01	DCF2 (9)
B-1	Pu-240	4.070E-01	4.070E-01	DCF2 (10)
B-1	Ra-226+D	3.712E-02	3.700E-02	DCF2 (12)
B-1	Ra-228+D	5.931E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	5.550E-05	5.550E-05	DCF2 (14)
B-1	Th-228+D	1.905E-01	1.739E-01	DCF2 (15)
B-1	Th-229+D	9.651E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.663E-01	3.663E-01	DCF2 (17)
B-1	Th-232	4.440E-01	4.440E-01	DCF2 (18)
B-1	U-233	4.070E-02	4.070E-02	DCF2 (19)
B-1	U-234	3.700E-02	3.700E-02	DCF2 (20)
B-1	U-235+D	3.404E-02	3.404E-02	DCF2 (21)
B-1	U-236	3.515E-02	3.515E-02	DCF2 (22)
B-1	U-238	3.219E-02	3.219E-02	DCF2 (23)
B-1	U-238+D	3.222E-02	3.219E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	5.865E-03	4.440E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.111E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.960E-03	2.960E-03	DCF3 (5)
D-1	Pb-210+D	1.296E-02	7.030E-03	DCF3 (6)
D-1	Pu-238	8.140E-04	8.140E-04	DCF3 (7)
D-1	Pu-239	8.880E-04	8.880E-04	DCF3 (9)
D-1	Pu-240	8.880E-04	8.880E-04	DCF3 (10)
D-1	Ra-226+D	5.551E-03	5.550E-03	DCF3 (12)
D-1	Ra-228+D	1.961E-02	1.961E-02	DCF3 (13)
D-1	Tc-99	3.034E-06	3.034E-06	DCF3 (14)

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	1.137E-03	3.478E-04	DCF3(15)
D-1	Th-229+D	3.701E-03	1.961E-03	DCF3(16)
D-1	Th-230	8.140E-04	8.140E-04	DCF3(17)
D-1	Th-232	9.250E-04	9.250E-04	DCF3(18)
D-1	U-233	2.886E-04	2.886E-04	DCF3(19)
D-1	U-234	2.738E-04	2.738E-04	DCF3(20)
D-1	U-235+D	2.606E-04	2.590E-04	DCF3(21)
D-1	U-236	2.590E-04	2.590E-04	DCF3(22)
D-1	U-238	2.479E-04	2.479E-04	DCF3(23)
D-1	U-238+D	2.634E-04	2.479E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+02	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	1.200E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	1.000E+00	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters
 Thickness: 0.15 meters
 Cover Depth: 0.00 meters

Am-241 1.000E+00
 Cs-137 1.000E+00
 Np-237 1.000E+00
 Pu-238 1.000E+00
 Pu-239 1.000E+00
 Pu-240 1.000E+00
 Tc-99 1.000E+00
 Th-228 1.000E+00
 Th-230 1.000E+00
 Th-232 1.000E+00
 U-234 1.000E+00
 U-235 1.000E+00
 U-238 1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	9.227E-01	8.280E-01	1.274E+00	1.233E+00	1.241E+00	1.282E+00
M(t):	9.227E-03	8.280E-03	1.274E-02	1.233E-02	1.241E-02	1.282E-02

Maximum TDOSE(t): 1.287E+00 mrem/yr at t = 35.08 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.508E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.735E-03	0.0021	4.401E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Cs-137	9.582E-02	0.0745	9.232E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.082E-05	0.0000
Np-237	7.000E-02	0.0544	2.248E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.131E-03	0.0009
Pu-238	6.899E-06	0.0000	3.803E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.781E-03	0.0014
Pu-239	1.959E-05	0.0000	5.535E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.571E-03	0.0020
Pu-240	8.810E-06	0.0000	5.520E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0020
Tc-99	3.134E-10	0.0000	2.829E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.291E-10	0.0000
Th-228	1.549E-06	0.0000	6.618E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.410E-09	0.0000
Th-230	1.072E-02	0.0083	5.028E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.847E-03	0.0022
Th-232	9.708E-01	0.7543	9.435E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.226E-02	0.0484
U-234	2.678E-05	0.0000	4.784E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.520E-04	0.0006
U-235	4.871E-02	0.0378	4.530E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-04	0.0006
U-238	1.030E-02	0.0080	4.154E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-04	0.0006
Total	1.209E+00	0.9395	3.732E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.745E-02	0.0602

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.508E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.815E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.588E-02	0.0745
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.115E-02	0.0553
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.826E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.646E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.628E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.428E-10	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.361E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.033E+00	0.8028
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.836E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.944E-02	0.0384
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.287E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.899E-03	0.0031	4.666E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-03	0.0023
Cs-137	2.187E-01	0.2370	2.107E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-04	0.0002
Np-237	7.422E-02	0.0804	2.384E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.199E-03	0.0013
Pu-238	9.167E-06	0.0000	5.055E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.367E-03	0.0026
Pu-239	1.975E-05	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Pu-240	8.909E-06	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Tc-99	7.333E-06	0.0000	6.619E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.702E-06	0.0000
Th-228	5.129E-01	0.5559	2.192E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.785E-03	0.0030
Th-230	2.337E-04	0.0003	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.380E-03	0.0026
Th-232	2.599E-02	0.0282	6.155E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.039E-03	0.0065
U-234	2.667E-05	0.0000	5.071E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.988E-04	0.0009
U-235	5.174E-02	0.0561	4.667E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.602E-04	0.0008
U-238	1.095E-02	0.0119	4.417E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.686E-04	0.0008
Total	8.977E-01	0.9729	3.806E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.459E-02	0.0267

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.104E-03	0.0055
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.188E-01	0.2372
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.544E-02	0.0818
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.427E-03	0.0026
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.657E-03	0.0029
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.504E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.157E-01	0.5589
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.664E-03	0.0029
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-02	0.0348
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.305E-04	0.0009
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.250E-02	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.173E-02	0.0127
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.227E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.894E-03	0.0035	4.658E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.155E-03	0.0026
Cs-137	2.136E-01	0.2580	2.058E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.356E-04	0.0002
Np-237	7.410E-02	0.0895	2.380E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.197E-03	0.0014
Pu-238	9.093E-06	0.0000	5.014E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.348E-03	0.0028
Pu-239	1.975E-05	0.0000	5.581E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Pu-240	8.906E-06	0.0000	5.580E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Tc-99	5.505E-06	0.0000	4.969E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.782E-06	0.0000
Th-228	3.570E-01	0.4311	1.526E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-03	0.0023
Th-230	5.361E-04	0.0006	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.388E-03	0.0029
Th-232	8.692E-02	0.1050	6.328E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.227E-02	0.0148
U-234	2.663E-05	0.0000	5.063E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.974E-04	0.0010
U-235	5.165E-02	0.0624	4.660E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.591E-04	0.0009
U-238	1.093E-02	0.0132	4.409E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.673E-04	0.0009
Total	7.977E-01	0.9634	3.751E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.995E-02	0.0362

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.096E-03	0.0062
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.137E-01	0.2581
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.532E-02	0.0910
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.407E-03	0.0029
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0032
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.656E-03	0.0032
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.590E-01	0.4335
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.974E-03	0.0036
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.926E-02	0.1199
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.291E-04	0.0010
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.241E-02	0.0633
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.171E-02	0.0141
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.280E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.668E-03	0.0021	4.293E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-03	0.0016
Cs-137	6.745E-02	0.0529	6.499E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.282E-05	0.0000
Np-237	6.828E-02	0.0536	2.193E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-03	0.0009
Pu-238	6.114E-06	0.0000	3.369E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.578E-03	0.0012
Pu-239	1.952E-05	0.0000	5.515E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.561E-03	0.0020
Pu-240	8.768E-06	0.0000	5.494E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.552E-03	0.0020
Tc-99	4.339E-12	0.0000	3.916E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.557E-12	0.0000
Th-228	6.944E-09	0.0000	2.968E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.771E-11	0.0000
Th-230	1.510E-02	0.0118	5.030E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.122E-03	0.0024
Th-232	9.850E-01	0.7729	9.483E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.293E-02	0.0494
U-234	2.780E-05	0.0000	4.668E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.330E-04	0.0006
U-235	4.749E-02	0.0373	4.505E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.141E-04	0.0006
U-238	1.004E-02	0.0079	4.047E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.043E-04	0.0006
Total	1.196E+00	0.9385	3.670E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.803E-02	0.0612

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.698E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.750E-02	0.0530
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.940E-02	0.0545
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.618E-03	0.0013
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.636E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.899E-12	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.982E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.827E-02	0.0143
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E+00	0.8223
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.654E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-02	0.0378
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-02	0.0084
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.456E-03	0.0020	3.950E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.828E-03	0.0015
Cs-137	2.081E-02	0.0169	2.005E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-05	0.0000
Np-237	6.281E-02	0.0509	2.017E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-03	0.0008
Pu-238	4.079E-06	0.0000	2.246E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.052E-03	0.0009
Pu-239	1.928E-05	0.0000	5.449E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.531E-03	0.0021
Pu-240	8.630E-06	0.0000	5.407E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-03	0.0020
Tc-99	2.567E-18	0.0000	2.317E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.696E-18	0.0000
Th-228	9.403E-17	0.0000	4.018E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.106E-19	0.0000
Th-230	2.945E-02	0.0239	5.040E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.148E-03	0.0034
Th-232	9.861E-01	0.7998	9.476E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.296E-02	0.0511
U-234	3.513E-05	0.0000	4.298E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.731E-04	0.0005
U-235	4.365E-02	0.0354	4.469E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.783E-04	0.0006
U-238	9.196E-03	0.0075	3.709E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.454E-04	0.0005
Total	1.154E+00	0.9364	3.483E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.805E-02	0.0633

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.323E-03	0.0035
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.082E-02	0.0169
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.384E-02	0.0518
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.078E-03	0.0009
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.604E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.574E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.265E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.454E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.365E-02	0.0273
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E+00	0.8509
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.125E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.433E-02	0.0360
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.845E-03	0.0080
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run
 File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.266E-03	0.0010	2.029E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.390E-04	0.0008
Cs-137	1.705E-06	0.0000	1.643E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-09	0.0000
Np-237	3.221E-02	0.0260	1.035E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.215E-04	0.0004
Pu-238	2.167E-07	0.0000	8.759E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.112E-05	0.0000
Pu-239	1.752E-05	0.0000	4.947E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-03	0.0019
Pu-240	7.596E-06	0.0000	4.759E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.210E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.274E-01	0.1027	5.100E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.170E-02	0.0094
Th-232	9.717E-01	0.7829	9.339E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.204E-02	0.0500
U-234	2.412E-04	0.0002	2.264E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.561E-04	0.0003
U-235	2.252E-02	0.0181	4.317E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-04	0.0004
U-238	4.568E-03	0.0037	1.845E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.210E-04	0.0003
Total	1.160E+00	0.9346	2.814E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.091E-02	0.0652

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.225E-03	0.0018
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.706E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.274E-02	0.0264
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.222E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-03	0.0019
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.265E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-01	0.1121
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E+00	0.8330
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.995E-04	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.301E-02	0.0185
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.891E-03	0.0039
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.241E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.527E-04	0.0004	8.825E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.084E-04	0.0003
Cs-137	1.330E-11	0.0000	1.281E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.442E-15	0.0000
Np-237	1.398E-02	0.0109	4.502E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-04	0.0002
Pu-238	1.919E-07	0.0000	1.561E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.880E-07	0.0000
Pu-239	1.553E-05	0.0000	4.383E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Pu-240	6.476E-06	0.0000	4.057E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.884E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.156E-01	0.1682	5.125E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-02	0.0144
Th-232	9.541E-01	0.7442	9.169E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.092E-02	0.0475
U-234	6.418E-04	0.0005	1.096E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.957E-04	0.0002
U-235	1.026E-02	0.0080	3.985E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-04	0.0003
U-238	1.906E-03	0.0015	7.709E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E-04	0.0001
Total	1.197E+00	0.9338	2.465E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.467E-02	0.0660

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.699E-04	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.331E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.421E-02	0.0111
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.955E-07	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.095E-03	0.0016
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.931E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.342E-01	0.1827
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E+00	0.7918
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.386E-04	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.062E-02	0.0083
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.282E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Am-241	Np-237+D	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Am-241	U-233	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
Am-241	Th-229+D	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Am-241	ΣDSR(j)		5.104E-03	5.096E-03	4.698E-03	4.323E-03	2.225E-03	9.699E-04
Cs-137+D	Cs-137+D	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Np-237+D	Np-237+D	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237+D	U-233	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
Np-237+D	Th-229+D	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Np-237+D	ΣDSR(j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	U-234	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
Pu-238	Th-230	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Pu-238	Ra-226+D	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Pu-238	Pb-210+D	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pu-238	ΣDSR(j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.222E-05	9.955E-07
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-239	U-235+D	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
Pu-239	Pa-231	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pu-239	Ac-227+D	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Pu-239	ΣDSR(j)		2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	U-236	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Pu-240	Th-232	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Pu-240	Ra-228+D	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Pu-240	Th-228+D	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Pu-240	ΣDSR(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	Ra-226+D	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Th-230	Pb-210+D	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Th-230	ΣDSR(j)		2.664E-03	2.974E-03	1.827E-02	3.365E-02	1.392E-01	2.342E-01

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	Ra-228+D	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-232	Th-228+D	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-232	ΣDSR(j)		3.209E-02	9.926E-02	1.048E+00	1.049E+00	1.034E+00	1.015E+00
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	Th-230	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
U-234	Ra-226+D	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
U-234	Pb-210+D	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
U-234	ΣDSR(j)		8.305E-04	8.291E-04	7.654E-04	7.125E-04	5.995E-04	8.386E-04
U-235+D	U-235+D	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235+D	Pa-231	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
U-235+D	Ac-227+D	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
U-235+D	ΣDSR(j)		5.250E-02	5.241E-02	4.821E-02	4.433E-02	2.301E-02	1.062E-02
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238+D	U-238+D	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238+D	U-234	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-238+D	Th-230	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
U-238+D	Ra-226+D	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
U-238+D	Pb-210+D	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
U-238+D	ΣDSR(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.041E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	1.959E+04	1.962E+04	2.129E+04	2.313E+04	4.494E+04	1.031E+05
Cs-137	4.570E+02	4.679E+02	1.482E+03	4.803E+03	5.860E+07	7.515E+12
Np-237	1.326E+03	1.328E+03	1.441E+03	1.566E+03	3.054E+03	7.035E+03
Pu-238	4.120E+04	4.154E+04	6.181E+04	9.273E+04	2.369E+06	1.005E+08
Pu-239	3.748E+04	3.749E+04	3.793E+04	3.840E+04	4.229E+04	4.773E+04
Pu-240	3.763E+04	3.764E+04	3.824E+04	3.885E+04	4.414E+04	5.178E+04
Tc-99	6.648E+06	8.856E+06	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	1.939E+02	2.786E+02	1.432E+10	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	3.753E+04	3.362E+04	5.473E+03	2.972E+03	7.186E+02	4.270E+02
Th-232	3.116E+03	1.008E+03	9.542E+01	9.532E+01	9.672E+01	9.851E+01
U-234	1.204E+05	1.206E+05	1.306E+05	1.404E+05	1.668E+05	1.192E+05
U-235	1.905E+03	1.908E+03	2.074E+03	2.256E+03	4.347E+03	9.416E+03
U-238	8.528E+03	8.542E+03	9.307E+03	1.016E+04	2.044E+04	4.901E+04

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 35.08 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	5.104E-03	1.959E+04	4.815E-03	2.077E+04
Cs-137	1.000E+00	0.000E+00	2.188E-01	4.570E+02	9.588E-02	1.043E+03
Np-237	1.000E+00	0.000E+00	7.544E-02	1.326E+03	7.115E-02	1.405E+03
Pu-238	1.000E+00	0.000E+00	2.427E-03	4.120E+04	1.826E-03	5.477E+04
Pu-239	1.000E+00	0.000E+00	2.668E-03	3.748E+04	2.646E-03	3.780E+04
Pu-240	1.000E+00	0.000E+00	2.657E-03	3.763E+04	2.628E-03	3.806E+04
Tc-99	1.000E+00	0.000E+00	1.504E-05	6.648E+06	6.428E-10	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.157E-01	1.939E+02	1.557E-06	6.422E+07
Th-230	1.000E+00	1.000E+03	2.342E-01	4.270E+02	1.361E-02	7.345E+03
Th-232	1.000E+00	68.6 ± 0.1	1.050E+00	9.524E+01	1.033E+00	9.679E+01
U-234	1.000E+00	1.000E+03	8.386E-04	1.192E+05	7.836E-04	1.276E+05
U-235	1.000E+00	0.000E+00	5.250E-02	1.905E+03	4.944E-02	2.023E+03
U-238	1.000E+00	0.000E+00	1.173E-02	8.528E+03	1.103E-02	9.067E+03

*At specific activity limit

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Np-237	Am-241	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Np-237	Np-237	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237	ΣDOSE (j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
U-233	Am-241	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
U-233	Np-237	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
U-233	ΣDOSE (j)		2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.767E-07	7.450E-07
Th-229	Am-241	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Th-229	Np-237	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Th-229	ΣDOSE (j)		8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.401E-06	7.947E-06
Cs-137	Cs-137	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	ΣDOSE (j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
U-234	Pu-238	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	U-238	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-234	ΣDOSE (j)		8.305E-04	8.291E-04	7.611E-04	6.974E-04	3.465E-04	1.445E-04
Th-230	Pu-238	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	U-234	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
Th-230	U-238	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
Th-230	ΣDOSE (j)		2.510E-03	2.509E-03	2.505E-03	2.500E-03	2.460E-03	2.408E-03
Ra-226	Pu-238	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Ra-226	Th-230	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Ra-226	U-234	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
Ra-226	U-238	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
Ra-226	ΣDOSE (j)		1.548E-04	4.642E-04	1.536E-02	3.004E-02	1.304E-01	2.210E-01
Pb-210	Pu-238	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pb-210	Th-230	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Pb-210	U-234	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
Pb-210	U-238	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
Pb-210	ΣDOSE (j)		8.552E-08	5.932E-07	4.087E-04	1.119E-03	6.539E-03	1.146E-02
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
U-235	Pu-239	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
U-235	U-235	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235	ΣDOSE (j)		5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pa-231	U-235	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Pa-231	ΣDOSE(j)		2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Ac-227	Pu-239	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Ac-227	U-235	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Ac-227	ΣDOSE(j)		1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	ΣDOSE(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
U-236	Pu-240	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Th-232	Pu-240	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	ΣDOSE(j)		2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Ra-228	Pu-240	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Ra-228	Th-232	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Ra-228	ΣDOSE(j)		2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-228	Pu-240	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Th-228	Th-228	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-228	ΣDOSE(j)		5.197E-01	3.833E-01	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238	U-238	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238	ΣDOSE(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Recreational User Run

File : X:\WILDLIFE AREAS\D2\RU\RU DET-D2-100 MREM.RAD

Individual Nuclide Soil Concentration
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.00 seconds

Recreational User

The following summary report includes the peak dose from cumulative radionuclide inventory.

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Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(1)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(2)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(3)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(4)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(5)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(6)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(7)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(8)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(9)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(10)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(11)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(12)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(13)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(14)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(15)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(16)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(17)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(18)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(19)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(20)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(21)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(22)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(23)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(24)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(25)
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(26)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(27)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(28)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(29)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(30)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(31)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(32)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.160E+00	2.072E+00	DCF2(1)
B-1	Cs-137+D	1.554E-04	1.554E-04	DCF2(2)
B-1	Pa-231	5.550E-01	5.550E-01	DCF2(3)
B-1	Pb-210+D	4.111E-02	2.183E-02	DCF2(4)
B-1	Ra-226+D	3.712E-02	3.700E-02	DCF2(5)
B-1	Th-230	3.663E-01	3.663E-01	DCF2(6)
B-1	U-234	3.700E-02	3.700E-02	DCF2(7)
B-1	U-235+D	3.404E-02	3.404E-02	DCF2(8)
B-1	U-238	3.219E-02	3.219E-02	DCF2(9)
B-1	U-238+D	3.222E-02	3.219E-02	DCF2(10)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	5.865E-03	4.440E-03	DCF3(1)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(2)
D-1	Pa-231	2.960E-03	2.960E-03	DCF3(3)

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Pb-210+D	1.296E-02	7.030E-03	DCF3(4)
D-1	Ra-226+D	5.551E-03	5.550E-03	DCF3(5)
D-1	Th-230	8.140E-04	8.140E-04	DCF3(6)
D-1	U-234	2.738E-04	2.738E-04	DCF3(7)
D-1	U-235+D	2.606E-04	2.590E-04	DCF3(8)
D-1	U-238	2.479E-04	2.479E-04	DCF3(9)
D-1	U-238+D	2.634E-04	2.479E-04	DCF3(10)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(2,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(2,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(3,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(7,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(7,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(8,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(8,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				

Summary : Wildlife Area Recreational User Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Teen Recreational User Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(7,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(7,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(8,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(8,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	9.100E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): U-234	3.500E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	4.100E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	1.300E+02	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(9)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(7)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(8)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(9)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	1.200E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	1.000E+00	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm*3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm*3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Summary : Wildlife Area Recreational User Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Recreational User Run

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Cs-137	9.100E+00
Thickness:	0.15 meters	U-234	3.500E+02
Cover Depth:	0.00 meters	U-235	4.100E+01
		U-238	1.300E+02

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	5.959E+00	5.906E+00	4.255E+00	3.536E+00	1.789E+00	9.942E-01
M(t):	5.959E+00	5.906E+00	4.255E+00	3.536E+00	1.789E+00	9.942E-01

Maximum TDOSE(t): 5.959E+00 mrem/yr at t = 0.000E+00 years

Summary : Wildlife Area Recreational User Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.990E+00	0.3339	1.917E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.263E-03	0.0002
U-234	9.334E-03	0.0016	1.775E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.796E-01	0.0469
U-235	2.121E+00	0.3560	1.913E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.117E-02	0.0052
U-238	1.424E+00	0.2390	5.741E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.992E-02	0.0168
Total	5.545E+00	0.9304	2.541E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.119E-01	0.0691

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.991E+00	0.3342
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.907E-01	0.0488
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E+00	0.3612
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.524E+00	0.2558
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.959E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.944E+00	0.3291	1.873E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.234E-03	0.0002
U-234	9.319E-03	0.0016	1.772E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.791E-01	0.0473
U-235	2.118E+00	0.3585	1.911E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.112E-02	0.0053
U-238	1.421E+00	0.2407	5.731E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.974E-02	0.0169
Total	5.492E+00	0.9299	2.536E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.112E-01	0.0696

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.945E+00	0.3293
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.902E-01	0.0491
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.149E+00	0.3639
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.522E+00	0.2577
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.906E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	6.138E-01	0.1442	5.914E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.896E-04	0.0001
U-234	9.731E-03	0.0023	1.634E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.565E-01	0.0603
U-235	1.947E+00	0.4575	1.847E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.928E-02	0.0069
U-238	1.305E+00	0.3066	5.262E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.156E-02	0.0215
Total	3.875E+00	0.9107	2.345E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.778E-01	0.0888

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.142E-01	0.1443
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.679E-01	0.0630
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.976E+00	0.4645
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.397E+00	0.3282
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.255E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.893E-01	0.0535	1.824E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.202E-04	0.0000
U-234	1.230E-02	0.0035	1.504E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.356E-01	0.0666
U-235	1.789E+00	0.5060	1.832E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.781E-02	0.0079
U-238	1.195E+00	0.3381	4.822E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.391E-02	0.0237
Total	3.187E+00	0.9011	2.170E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.474E-01	0.0982

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.895E-01	0.0536
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.494E-01	0.0705
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.817E+00	0.5140
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.280E+00	0.3619
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.536E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.552E-05	0.0000	1.495E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.851E-09	0.0000
U-234	8.441E-02	0.0472	7.924E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.246E-01	0.0697
U-235	9.233E-01	0.5161	1.770E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.977E-02	0.0110
U-238	5.939E-01	0.3320	2.398E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.173E-02	0.0233
Total	1.602E+00	0.8953	1.209E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.861E-01	0.1040

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.553E-05	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.098E-01	0.1173
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.432E-01	0.5273
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.359E-01	0.3554
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.789E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.210E-10	0.0000	1.166E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.682E-14	0.0000
U-234	2.246E-01	0.2259	3.837E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.849E-02	0.0689
U-235	4.208E-01	0.4233	1.634E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.444E-02	0.0145
U-238	2.477E-01	0.2492	1.002E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.744E-02	0.0175
Total	8.932E-01	0.8984	6.473E-04	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.004E-01	0.1010

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.211E-10	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.935E-01	0.2952
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.354E-01	0.4380
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.653E-01	0.2668
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.942E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Recreational User Run

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	Th-230	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
U-234	Ra-226+D	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
U-234	Pb-210+D	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
U-234	∑DSR(j)		8.305E-04	8.291E-04	7.654E-04	7.125E-04	5.995E-04	8.386E-04
U-235+D	U-235+D	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235+D	Pa-231	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
U-235+D	Ac-227+D	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
U-235+D	∑DSR(j)		5.250E-02	5.241E-02	4.821E-02	4.433E-02	2.301E-02	1.062E-02
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238+D	U-238+D	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238+D	U-234	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-238+D	Th-230	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
U-238+D	Ra-226+D	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
U-238+D	Pb-210+D	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
U-238+D	∑DSR(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.041E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t=	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137		4.570E+00	4.679E+00	1.482E+01	4.803E+01	5.860E+05	7.515E+10
U-234		1.204E+03	1.206E+03	1.306E+03	1.404E+03	1.668E+03	1.192E+03
U-235		1.905E+01	1.908E+01	2.074E+01	2.256E+01	4.347E+01	9.416E+01
U-238		8.528E+01	8.542E+01	9.307E+01	1.016E+02	2.044E+02	4.901E+02

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Cs-137	9.100E+00	0.000E+00	2.188E-01	4.570E+00	2.188E-01	4.570E+00
U-234	3.500E+02	1.000E+03	8.386E-04	1.192E+03	8.305E-04	1.204E+03
U-235	4.100E+01	0.000E+00	5.250E-02	1.905E+01	5.250E-02	1.905E+01

Summary : Wildlife Area Recreational User Run

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U-238	1.300E+02	0.000E+00	1.173E-02	8.528E+01	1.173E-02	8.528E+01
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Summary : Wildlife Area Recreational User Run

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.991E+00	1.945E+00	6.142E-01	1.895E-01	1.553E-05	1.211E-10
U-234	U-234	1.000E+00	2.907E-01	2.902E-01	2.663E-01	2.440E-01	1.211E-01	5.042E-02
U-234	U-238	9.999E-01	1.530E-07	4.583E-07	1.416E-05	2.582E-05	6.384E-05	5.319E-05
U-234	ΣDOSE (j)		2.907E-01	2.902E-01	2.663E-01	2.440E-01	1.211E-01	5.047E-02
Th-230	U-234	1.000E+00	3.951E-06	1.184E-05	3.817E-04	7.269E-04	2.601E-03	3.624E-03
Th-230	U-238	9.999E-01	1.386E-12	9.694E-12	1.000E-08	3.736E-08	5.892E-07	1.392E-06
Th-230	ΣDOSE (j)		3.951E-06	1.184E-05	3.817E-04	7.269E-04	2.602E-03	3.625E-03
Ra-226	U-234	1.000E+00	1.625E-07	1.137E-06	1.194E-03	4.540E-03	8.225E-02	2.279E-01
Ra-226	U-238	9.999E-01	4.277E-14	6.409E-13	2.091E-08	1.564E-07	1.284E-05	6.309E-05
Ra-226	ΣDOSE (j)		1.625E-07	1.137E-06	1.194E-03	4.540E-03	8.226E-02	2.280E-01
Pb-210	U-234	1.000E+00	6.745E-11	1.004E-09	2.374E-05	1.364E-04	3.925E-03	1.158E-02
Pb-210	U-238	9.999E-01	1.422E-17	4.380E-16	3.337E-10	3.953E-09	5.818E-07	3.131E-06
Pb-210	ΣDOSE (j)		6.745E-11	1.004E-09	2.374E-05	1.364E-04	3.925E-03	1.158E-02
U-235	U-235	1.000E+00	2.153E+00	2.149E+00	1.972E+00	1.807E+00	8.977E-01	3.744E-01
Pa-231	U-235	1.000E+00	9.349E-06	2.802E-05	8.990E-04	1.704E-03	5.839E-03	7.625E-03
Ac-227	U-235	1.000E+00	6.998E-07	4.852E-06	3.242E-03	8.602E-03	3.965E-02	5.340E-02
U-238	U-238	5.400E-05	5.152E-06	5.143E-06	4.721E-06	4.326E-06	2.149E-06	8.962E-07
U-238	U-238	9.999E-01	1.524E+00	1.522E+00	1.397E+00	1.280E+00	6.358E-01	2.651E-01
U-238	ΣDOSE (j)		1.524E+00	1.522E+00	1.397E+00	1.280E+00	6.358E-01	2.651E-01

THF(i) is the thread fraction of the parent nuclide.

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Individual Nuclide Soil Concentration
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	9.100E+00	8.888E+00	2.807E+00	8.658E-01	7.097E-05	5.534E-10
U-234	U-234	1.000E+00	3.500E+02	3.494E+02	3.206E+02	2.938E+02	1.458E+02	6.070E+01
U-234	U-238	9.999E-01	0.000E+00	3.679E-04	1.688E-02	3.093E-02	7.679E-02	6.401E-02
U-234	ΣS(j):		3.500E+02	3.494E+02	3.207E+02	2.938E+02	1.458E+02	6.077E+01
Th-230	U-234	1.000E+00	0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Th-230	U-238	9.999E-01	0.000E+00	1.657E-09	3.910E-06	1.475E-05	2.345E-04	5.542E-04
Th-230	ΣS(j):		0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Ra-226	U-234	1.000E+00	0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.186E-01
Ra-226	U-238	9.999E-01	0.000E+00	2.393E-13	2.841E-08	2.157E-07	1.792E-05	8.818E-05
Ra-226	ΣS(j):		0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.187E-01
Pb-210	U-234	1.000E+00	0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.012E-01
Pb-210	U-238	9.999E-01	0.000E+00	1.848E-15	8.373E-09	1.011E-07	1.510E-05	8.142E-05
Pb-210	ΣS(j):		0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.013E-01
U-235	U-235	1.000E+00	4.100E+01	4.093E+01	3.757E+01	3.442E+01	1.710E+01	7.131E+00
Pa-231	U-235	1.000E+00	0.000E+00	8.666E-04	4.129E-02	7.863E-02	2.705E-01	3.535E-01
Ac-227	U-235	1.000E+00	0.000E+00	1.365E-05	2.082E-02	5.574E-02	2.584E-01	3.482E-01
U-238	U-238	5.400E-05	7.020E-03	7.008E-03	6.432E-03	5.894E-03	2.928E-03	1.221E-03
U-238	U-238	9.999E-01	1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.421E+01	2.261E+01
U-238	ΣS(j):		1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.422E+01	2.261E+01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 0.50 seconds

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Wildlife Worker

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 1 mrem/yr.

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Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1(51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1(54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1(55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1(57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1(60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2(1)
B-1	Am-241	3.550E-01	3.552E-01	DCF2(2)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2(3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2(4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(5)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2(6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2(7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2(9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2(10)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2(12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2(13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2(14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2(15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2(16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2(18)
B-1	U-233	3.550E-02	3.552E-02	DCF2(19)
B-1	U-234	3.480E-02	3.478E-02	DCF2(20)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2(21)
B-1	U-236	3.220E-02	3.219E-02	DCF2(22)
B-1	U-238	2.960E-02	2.960E-02	DCF2(23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3(2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3(4)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3(5)
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3(6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3(7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3(9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3(10)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3(12)
D-1	Ra-228+D	2.552E-03	2.553E-03	DCF3(13)
D-1	Tc-99	2.370E-06	2.368E-06	DCF3(14)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.302E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.266E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.890E-04	1.887E-04	DCF3(19)
D-1	U-234	1.810E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(21)
D-1	U-236	1.740E-04	1.739E-04	DCF3(22)
D-1	U-238	1.670E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T (2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T (3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T (4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T (5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T (6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T (7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T (8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T (9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC (3)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC(13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH(13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.610E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.700E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSNS
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSNS
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Contaminated Zone Dimensions Initial Soil Concentrations, pCi/g

<p>Area: 20000.00 square meters</p> <p>Thickness: 0.15 meters</p> <p>Cover Depth: 0.00 meters</p>	<p>Am-241 1.000E+00</p> <p>Cs-137 1.000E+00</p> <p>Np-237 1.000E+00</p> <p>Pu-238 1.000E+00</p> <p>Pu-239 1.000E+00</p> <p>Pu-240 1.000E+00</p> <p>Tc-99 1.000E+00</p> <p>Th-228 1.000E+00</p> <p>Th-230 1.000E+00</p> <p>Th-232 1.000E+00</p> <p>U-234 1.000E+00</p> <p>U-235 1.000E+00</p> <p>U-238 1.000E+00</p>
---	---

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.950E+00	1.739E+00	2.597E+00	2.507E+00	2.518E+00	2.599E+00
M(t):	1.950E+00	1.739E+00	2.597E+00	2.507E+00	2.518E+00	2.599E+00

Maximum TDOSE(t): 2.625E+00 mrem/yr at t = 34.63 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.463E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.816E-03	0.0022	1.455E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.331E-03	0.0016
Cs-137	2.058E-01	0.0784	2.739E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.306E-04	0.0000
Np-237	1.489E-01	0.0567	7.582E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.401E-03	0.0009
Pu-238	1.471E-05	0.0000	1.330E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.971E-03	0.0015
Pu-239	4.162E-05	0.0000	1.913E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.691E-03	0.0022
Pu-240	1.872E-05	0.0000	1.908E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.676E-03	0.0022
Tc-99	7.577E-10	0.0000	8.836E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.217E-10	0.0000
Th-228	3.874E-06	0.0000	2.091E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.808E-09	0.0000
Th-230	2.249E-02	0.0086	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.166E-03	0.0020
Th-232	2.061E+00	0.7850	2.704E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.404E-02	0.0092
U-234	5.686E-05	0.0000	1.427E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.058E-03	0.0004
U-235	1.036E-01	0.0395	1.330E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.042E-03	0.0004
U-238	2.191E-02	0.0083	1.211E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E-03	0.0004
Total	2.569E+00	0.9788	1.207E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.456E-02	0.0208

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.463E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.029E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.059E-01	0.0784
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-01	0.0576
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.119E-03	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.924E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.885E-03	0.0022
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.380E-09	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.884E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.782E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.085E+00	0.7943
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-01	0.0399
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-02	0.0087
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.625E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.160E-03	0.0032	1.541E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.588E-03	0.0024
Cs-137	4.647E-01	0.2383	6.185E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.950E-04	0.0002
Np-237	1.577E-01	0.0809	8.033E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.543E-03	0.0013
Pu-238	1.948E-05	0.0000	1.761E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.259E-03	0.0027
Pu-239	4.197E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Tc-99	1.558E-05	0.0000	1.817E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.278E-05	0.0000
Th-228	1.090E+00	0.5589	5.884E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.760E-03	0.0014
Th-230	4.966E-04	0.0003	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.823E-03	0.0025
Th-232	5.523E-02	0.0283	1.788E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.219E-03	0.0032
U-234	5.667E-05	0.0000	1.511E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-03	0.0006
U-235	1.099E-01	0.0564	1.368E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.087E-03	0.0006
U-238	2.328E-02	0.0119	1.286E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.113E-03	0.0006
Total	1.908E+00	0.9782	1.237E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.130E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-02	0.0056
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.650E-01	0.2384
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.603E-01	0.0822
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.455E-03	0.0028
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.974E-03	0.0031
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.951E-03	0.0031
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.839E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E+00	0.5603
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.480E-03	0.0028
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.162E-02	0.0316
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.194E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-01	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.440E-02	0.0125
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.149E-03	0.0035	1.539E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0026
Cs-137	4.539E-01	0.2611	6.041E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.881E-04	0.0002
Np-237	1.575E-01	0.0906	8.020E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.539E-03	0.0015
Pu-238	1.932E-05	0.0000	1.747E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.217E-03	0.0030
Pu-239	4.196E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.738E-03	0.0033
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.737E-03	0.0033
Tc-99	1.170E-05	0.0000	1.364E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.597E-06	0.0000
Th-228	7.586E-01	0.4364	4.096E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.921E-03	0.0011
Th-230	1.139E-03	0.0007	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.826E-03	0.0028
Th-232	1.847E-01	0.1062	1.839E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.021E-03	0.0046
U-234	5.658E-05	0.0000	1.509E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.120E-03	0.0006
U-235	1.097E-01	0.0631	1.366E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-03	0.0006
U-238	2.324E-02	0.0134	1.284E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.112E-03	0.0006
Total	1.695E+00	0.9750	1.222E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.219E-02	0.0243

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.088E-02	0.0063
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.542E-01	0.2612
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-01	0.0921
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.411E-03	0.0031
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.972E-03	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.949E-03	0.0034
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.131E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.606E-01	0.4375
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.126E-03	0.0035
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.929E-01	0.1110
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.192E-03	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-01	0.0638
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.436E-02	0.0140
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.739E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.670E-03	0.0022	1.418E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.221E-03	0.0016
Cs-137	1.433E-01	0.0552	1.908E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.099E-05	0.0000
Np-237	1.451E-01	0.0559	7.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.340E-03	0.0009
Pu-238	1.299E-05	0.0000	1.174E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.506E-03	0.0013
Pu-239	4.147E-05	0.0000	1.906E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.670E-03	0.0022
Pu-240	1.863E-05	0.0000	1.899E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.648E-03	0.0022
Tc-99	9.220E-12	0.0000	1.075E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.564E-12	0.0000
Th-228	1.476E-08	0.0000	7.967E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-11	0.0000
Th-230	3.209E-02	0.0124	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.411E-03	0.0021
Th-232	2.093E+00	0.8059	2.718E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.428E-02	0.0093
U-234	5.908E-05	0.0000	1.391E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.030E-03	0.0004
U-235	1.009E-01	0.0389	1.323E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-03	0.0004
U-238	2.133E-02	0.0082	1.179E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-03	0.0004
Total	2.542E+00	0.9787	1.185E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.424E-02	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.434E-01	0.0552
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.475E-01	0.0568
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.636E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.902E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.856E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-11	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.480E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.766E-02	0.0145
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.118E+00	0.8154
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-01	0.0393
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.236E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.597E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.219E-03	0.0021	1.305E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.884E-03	0.0015
Cs-137	4.422E-02	0.0176	5.885E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.807E-05	0.0000
Np-237	1.335E-01	0.0532	6.799E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-03	0.0009
Pu-238	8.667E-06	0.0000	7.826E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.337E-03	0.0009
Pu-239	4.098E-05	0.0000	1.883E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.602E-03	0.0022
Pu-240	1.834E-05	0.0000	1.869E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.559E-03	0.0022
Tc-99	5.455E-18	0.0000	6.361E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.475E-18	0.0000
Th-228	1.998E-16	0.0000	1.079E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.059E-19	0.0000
Th-230	6.258E-02	0.0250	1.612E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.334E-03	0.0025
Th-232	2.095E+00	0.8357	2.716E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.428E-02	0.0097
U-234	7.466E-05	0.0000	1.281E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.463E-04	0.0004
U-235	9.275E-02	0.0370	1.317E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.816E-04	0.0004
U-238	1.954E-02	0.0078	1.080E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.351E-04	0.0004
Total	2.453E+00	0.9784	1.121E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.304E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.234E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.424E-02	0.0176
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.357E-01	0.0541
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.424E-03	0.0010
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.831E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.764E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.937E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.003E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.907E-02	0.0275
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.120E+00	0.8455
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.374E-02	0.0374
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.049E-02	0.0082
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.507E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.690E-03	0.0011	6.704E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.995E-03	0.0008
Cs-137	3.624E-06	0.0000	4.823E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-09	0.0000
Np-237	6.845E-02	0.0272	3.489E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
Pu-238	4.606E-07	0.0000	3.052E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.124E-05	0.0000
Pu-239	3.722E-05	0.0000	1.709E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.085E-03	0.0020
Pu-240	1.614E-05	0.0000	1.645E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.893E-03	0.0019
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.707E-01	0.1075	1.627E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E-02	0.0053
Th-232	2.065E+00	0.8201	2.677E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-02	0.0095
U-234	5.125E-04	0.0002	6.778E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.964E-04	0.0002
U-235	4.785E-02	0.0190	1.297E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.359E-04	0.0003
U-238	9.708E-03	0.0039	5.374E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.651E-04	0.0002
Total	2.465E+00	0.9790	8.959E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.206E-02	0.0207

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-03	0.0019
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.959E-02	0.0276
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.475E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.294E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.073E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.842E-01	0.1129
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.089E+00	0.8297
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.016E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.860E-02	0.0193
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.018E-02	0.0040
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.518E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-1 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.174E-03	0.0005	2.915E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.678E-04	0.0003
Cs-137	2.826E-11	0.0000	3.761E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.794E-14	0.0000
Np-237	2.971E-02	0.0114	1.517E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.808E-04	0.0002
Pu-238	4.078E-07	0.0000	5.417E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.681E-06	0.0000
Pu-239	3.300E-05	0.0000	1.515E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.506E-03	0.0017
Pu-240	1.376E-05	0.0000	1.402E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.171E-03	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.582E-01	0.1763	1.631E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E-02	0.0075
Th-232	2.027E+00	0.7802	2.628E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.349E-02	0.0090
U-234	1.364E-03	0.0005	3.312E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.578E-04	0.0001
U-235	2.181E-02	0.0084	1.210E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.654E-04	0.0002
U-238	4.050E-03	0.0016	2.246E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.943E-04	0.0001
Total	2.544E+00	0.9789	7.797E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.404E-02	0.0208

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.071E-03	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.828E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.021E-02	0.0116
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.143E-06	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.691E-03	0.0018
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.325E-03	0.0017
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.779E-01	0.1839
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E+00	0.7893
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.239E-02	0.0086
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.246E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.599E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-1 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Am-241	Np-237+D	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Am-241	U-233	1.000E+00	3.277E-16	2.291E-15	2.305E-12	8.385E-12	1.055E-10	1.806E-10
Am-241	Th-229+D	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.523E-09
Am-241	ΣDSR(j)		1.090E-02	1.088E-02	1.003E-02	9.234E-03	4.752E-03	2.071E-03
Cs-137+D	Cs-137+D	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Np-237+D	Np-237+D	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237+D	U-233	1.000E+00	3.036E-09	9.094E-09	2.816E-07	5.144E-07	1.292E-06	1.098E-06
Np-237+D	Th-229+D	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.970E-06	1.629E-05
Np-237+D	ΣDSR(j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.021E-02
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	U-234	1.000E+00	1.688E-09	5.043E-09	1.339E-07	2.109E-07	2.124E-07	9.212E-08
Pu-238	Th-230	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Pu-238	Ra-226+D	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.160E-09	1.136E-07	3.988E-07
Pu-238	Pb-210+D	1.000E+00	1.270E-19	3.908E-18	2.795E-12	3.102E-11	2.937E-09	1.120E-08
Pu-238	ΣDSR(j)		5.455E-03	5.411E-03	3.636E-03	2.424E-03	9.475E-05	2.143E-06
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
Pu-239	U-235+D	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
Pu-239	Pa-231	1.000E+00	1.522E-16	1.065E-15	1.123E-12	4.286E-12	8.018E-11	2.310E-10
Pu-239	Ac-227+D	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Pu-239	ΣDSR(j)		5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.294E-03	4.691E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	U-236	1.000E+00	1.661E-11	4.980E-11	1.594E-09	3.014E-09	1.013E-08	1.286E-08
Pu-240	Th-232	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Pu-240	Ra-228+D	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Pu-240	Th-228+D	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Pu-240	ΣDSR(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Tc-99	Tc-99	1.000E+00	2.839E-05	2.131E-05	1.679E-11	9.937E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	Ra-226+D	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Th-230	Pb-210+D	1.000E+00	9.939E-08	6.894E-07	4.749E-04	1.300E-03	7.587E-03	1.328E-02
Th-230	ΣDSR(j)		5.480E-03	6.126E-03	3.766E-02	6.907E-02	2.842E-01	4.779E-01

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-1 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	Ra-228+D	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-232	Th-228+D	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-232	ΣDSR(j)		6.162E-02	1.929E-01	2.118E+00	2.120E+00	2.089E+00	2.051E+00
U-234	U-234	1.000E+00	1.194E-03	1.192E-03	1.094E-03	1.002E-03	4.972E-04	2.071E-04
U-234	Th-230	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
U-234	Ra-226+D	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.902E-04	1.358E-03
U-234	Pb-210+D	1.000E+00	2.240E-13	3.335E-12	7.884E-08	4.529E-07	1.303E-05	3.845E-05
U-234	ΣDSR(j)		1.194E-03	1.192E-03	1.103E-03	1.034E-03	1.016E-03	1.625E-03
U-235+D	U-235+D	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235+D	Pa-231	1.000E+00	4.636E-07	1.390E-06	4.458E-05	8.448E-05	2.895E-04	3.781E-04
U-235+D	Ac-227+D	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
U-235+D	ΣDSR(j)		1.110E-01	1.108E-01	1.020E-01	9.374E-02	4.860E-02	2.239E-02
U-238	U-238	5.400E-05	5.733E-08	5.723E-08	5.253E-08	4.813E-08	2.391E-08	9.971E-09
U-238+D	U-238+D	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.244E-03
U-238+D	U-234	9.999E-01	1.692E-09	5.067E-09	1.566E-07	2.855E-07	7.060E-07	5.881E-07
U-238+D	Th-230	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
U-238+D	Ra-226+D	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
U-238+D	Pb-210+D	9.999E-01	1.271E-19	3.916E-18	2.984E-12	3.534E-11	5.201E-09	2.799E-08
U-238+D	ΣDSR(j)		2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.246E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-1 MREM.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	9.173E+01	9.188E+01	9.967E+01	1.083E+02	2.104E+02	4.828E+02
Cs-137	2.151E+00	2.202E+00	6.972E+00	2.260E+01	2.758E+05	3.536E+10
Np-237	6.237E+00	6.247E+00	6.780E+00	7.370E+00	1.437E+01	3.310E+01
Pu-238	1.833E+02	1.848E+02	2.750E+02	4.126E+02	1.055E+04	4.665E+05
Pu-239	1.674E+02	1.674E+02	1.694E+02	1.715E+02	1.889E+02	2.132E+02
Pu-240	1.681E+02	1.681E+02	1.708E+02	1.735E+02	1.971E+02	2.312E+02
Tc-99	3.523E+04	4.693E+04	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	9.151E-01	1.315E+00	6.759E+07	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	1.825E+02	1.632E+02	2.655E+01	1.448E+01	3.519E+00	2.093E+00
Th-232	1.623E+01	5.184E+00	4.722E-01	4.717E-01	4.787E-01	4.875E-01
U-234	8.376E+02	8.390E+02	9.065E+02	9.673E+02	9.846E+02	6.154E+02
U-235	9.006E+00	9.021E+00	9.809E+00	1.067E+01	2.058E+01	4.467E+01
U-238	4.098E+01	4.105E+01	4.472E+01	4.881E+01	9.825E+01	2.355E+02

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 34.63 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	1.090E-02	9.173E+01	1.029E-02	9.716E+01
Cs-137	1.000E+00	0.000E+00	4.650E-01	2.151E+00	2.059E-01	4.856E+00
Np-237	1.000E+00	0.000E+00	1.603E-01	6.237E+00	1.513E-01	6.608E+00
Pu-238	1.000E+00	0.000E+00	5.455E-03	1.833E+02	4.119E-03	2.428E+02
Pu-239	1.000E+00	0.000E+00	5.974E-03	1.674E+02	5.924E-03	1.688E+02
Pu-240	1.000E+00	0.000E+00	5.951E-03	1.681E+02	5.885E-03	1.699E+02
Tc-99	1.000E+00	0.000E+00	2.839E-05	3.523E+04	1.380E-09	7.245E+08
Th-228	1.000E+00	0.000E+00	1.093E+00	9.151E-01	3.884E-06	2.575E+05
Th-230	1.000E+00	1.000E+03	4.779E-01	2.093E+00	2.782E-02	3.595E+01
Th-232	1.000E+00	68.9 ± 0.1	2.122E+00	4.713E-01	2.085E+00	4.796E-01
U-234	1.000E+00	1.000E+03	1.625E-03	6.154E+02	1.129E-03	8.860E+02
U-235	1.000E+00	0.000E+00	1.110E-01	9.006E+00	1.046E-01	9.557E+00
U-238	1.000E+00	0.000E+00	2.440E-02	4.098E+01	2.297E-02	4.354E+01

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-1 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Np-237	Am-241	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Np-237	Np-237	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237	ΣDOSE (j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.020E-02
U-233	Am-241	1.000E+00	3.277E-16	2.291E-15	2.305E-12	8.385E-12	1.055E-10	1.806E-10
U-233	Np-237	1.000E+00	3.036E-09	9.094E-09	2.816E-07	5.144E-07	1.292E-06	1.098E-06
U-233	ΣDOSE (j)		3.036E-09	9.094E-09	2.816E-07	5.144E-07	1.292E-06	1.098E-06
Th-229	Am-241	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.523E-09
Th-229	Np-237	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.970E-06	1.629E-05
Th-229	ΣDOSE (j)		1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Cs-137	Cs-137	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	ΣDOSE (j)		5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
U-234	Pu-238	1.000E+00	1.688E-09	5.043E-09	1.339E-07	2.109E-07	2.124E-07	9.212E-08
U-234	U-234	1.000E+00	1.194E-03	1.192E-03	1.094E-03	1.002E-03	4.972E-04	2.071E-04
U-234	U-238	9.999E-01	1.692E-09	5.067E-09	1.566E-07	2.855E-07	7.060E-07	5.881E-07
U-234	ΣDOSE (j)		1.194E-03	1.192E-03	1.094E-03	1.003E-03	4.981E-04	2.077E-04
Th-230	Pu-238	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	U-234	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
Th-230	U-238	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
Th-230	ΣDOSE (j)		5.157E-03	5.157E-03	5.148E-03	5.138E-03	5.056E-03	4.948E-03
Ra-226	Pu-238	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.160E-09	1.136E-07	3.988E-07
Ra-226	Th-230	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Ra-226	U-234	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.902E-04	1.358E-03
Ra-226	U-238	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
Ra-226	ΣDOSE (j)		3.229E-04	9.684E-04	3.205E-02	6.267E-02	2.720E-01	4.610E-01
Pb-210	Pu-238	1.000E+00	1.270E-19	3.908E-18	2.795E-12	3.102E-11	2.937E-09	1.120E-08
Pb-210	Th-230	1.000E+00	9.939E-08	6.894E-07	4.749E-04	1.300E-03	7.587E-03	1.328E-02
Pb-210	U-234	1.000E+00	2.240E-13	3.335E-12	7.884E-08	4.529E-07	1.303E-05	3.845E-05
Pb-210	U-238	9.999E-01	1.271E-19	3.916E-18	2.984E-12	3.534E-11	5.201E-09	2.799E-08
Pb-210	ΣDOSE (j)		9.939E-08	6.894E-07	4.750E-04	1.300E-03	7.600E-03	1.332E-02
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
U-235	Pu-239	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
U-235	U-235	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235	ΣDOSE (j)		1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	1.522E-16	1.065E-15	1.123E-12	4.286E-12	8.018E-11	2.310E-10
Pa-231	U-235	1.000E+00	4.636E-07	1.390E-06	4.458E-05	8.448E-05	2.895E-04	3.781E-04
Pa-231	ΣDOSE (j)		4.636E-07	1.390E-06	4.458E-05	8.448E-05	2.895E-04	3.781E-04
Ac-227	Pu-239	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Ac-227	U-235	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Ac-227	ΣDOSE (j)		3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	ΣDOSE (j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
U-236	Pu-240	1.000E+00	1.661E-11	4.980E-11	1.594E-09	3.014E-09	1.013E-08	1.286E-08
Th-232	Pu-240	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	ΣDOSE (j)		5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Ra-228	Pu-240	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Ra-228	Th-232	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Ra-228	ΣDOSE (j)		4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-228	Pu-240	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Th-228	Th-228	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-228	ΣDOSE (j)		1.101E+00	8.122E-01	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Tc-99	Tc-99	1.000E+00	2.839E-05	2.131E-05	1.679E-11	9.937E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.733E-08	5.723E-08	5.253E-08	4.813E-08	2.391E-08	9.971E-09
U-238	U-238	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.244E-03
U-238	ΣDOSE (j)		2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.244E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pu-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pu-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pu-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 2.31 seconds

Wildlife Worker

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 15 mrem/yr.

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Summary : Wildlife Area Wildlife Worker Deterministic Run

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Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1(51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1(54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1(55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1(57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1(60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.104E+00	2.035E+00	DCF2(1)
B-1	Am-241	3.552E-01	3.552E-01	DCF2(2)
B-1	Cs-137+D	1.443E-04	1.443E-04	DCF2(3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2(4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(5)
B-1	Pb-210+D	3.697E-02	2.072E-02	DCF2(6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2(7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2(9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2(10)
B-1	Ra-226+D	3.526E-02	3.515E-02	DCF2(12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2(13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2(14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2(15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2(16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2(18)
B-1	U-233	3.552E-02	3.552E-02	DCF2(19)
B-1	U-234	3.478E-02	3.478E-02	DCF2(20)
B-1	U-235+D	3.145E-02	3.145E-02	DCF2(21)
B-1	U-236	3.219E-02	3.219E-02	DCF2(22)
B-1	U-238	2.960E-02	2.960E-02	DCF2(23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3(2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3(4)
D-1	Pa-231	2.627E-03	2.627E-03	DCF3(5)
D-1	Pb-210+D	6.998E-03	2.553E-03	DCF3(6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3(7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3(9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3(10)
D-1	Ra-226+D	1.037E-03	1.036E-03	DCF3(12)
D-1	Ra-228+D	2.555E-03	2.553E-03	DCF3(13)
D-1	Tc-99	2.368E-06	2.368E-06	DCF3(14)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.301E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.269E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.887E-04	1.887E-04	DCF3(19)
D-1	U-234	1.813E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.752E-04	1.739E-04	DCF3(21)
D-1	U-236	1.739E-04	1.739E-04	DCF3(22)
D-1	U-238	1.665E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.791E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)
D-5				

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T (2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T (3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T (4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T (5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T (6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T (7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T (8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T (9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC (3)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.610E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.700E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSNS
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSNS
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Contaminated Zone Dimensions Initial Soil Concentrations, pCi/g

Area:	20000.00 square meters	Am-241	1.000E+00
Thickness:	0.15 meters	Cs-137	1.000E+00
Cover Depth:	0.00 meters	Np-237	1.000E+00
		Pu-238	1.000E+00
		Pu-239	1.000E+00
		Pu-240	1.000E+00
		Tc-99	1.000E+00
		Th-228	1.000E+00
		Th-230	1.000E+00
		Th-232	1.000E+00
		U-234	1.000E+00
		U-235	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.950E+00	1.739E+00	2.597E+00	2.507E+00	2.518E+00	2.599E+00
M(t):	1.300E-01	1.159E-01	1.731E-01	1.672E-01	1.679E-01	1.732E-01

Maximum TDOSE(t): 2.625E+00 mrem/yr at t = 34.63 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.463E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.816E-03	0.0022	1.456E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.331E-03	0.0016
Cs-137	2.058E-01	0.0784	2.744E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.306E-04	0.0000
Np-237	1.489E-01	0.0567	7.582E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.401E-03	0.0009
Pu-238	1.471E-05	0.0000	1.330E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.971E-03	0.0015
Pu-239	4.162E-05	0.0000	1.913E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.691E-03	0.0022
Pu-240	1.872E-05	0.0000	1.908E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.676E-03	0.0022
Tc-99	7.575E-10	0.0000	8.833E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.210E-10	0.0000
Th-228	3.872E-06	0.0000	2.090E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.803E-09	0.0000
Th-230	2.249E-02	0.0086	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.166E-03	0.0020
Th-232	2.061E+00	0.7850	2.704E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.406E-02	0.0092
U-234	5.686E-05	0.0000	1.426E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.059E-03	0.0004
U-235	1.036E-01	0.0395	1.328E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.042E-03	0.0004
U-238	2.191E-02	0.0083	1.211E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.045E-03	0.0004
Total	2.569E+00	0.9788	1.207E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.457E-02	0.0208

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.463E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.029E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.059E-01	0.0784
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-01	0.0576
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.119E-03	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.924E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.885E-03	0.0022
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.379E-09	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.882E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.782E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.085E+00	0.7943
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.130E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-01	0.0399
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-02	0.0087
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.625E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.160E-03	0.0032	1.542E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.588E-03	0.0024
Cs-137	4.647E-01	0.2383	6.197E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.950E-04	0.0002
Np-237	1.577E-01	0.0809	8.033E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.543E-03	0.0013
Pu-238	1.948E-05	0.0000	1.761E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.259E-03	0.0027
Pu-239	4.197E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Tc-99	1.558E-05	0.0000	1.817E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.277E-05	0.0000
Th-228	1.090E+00	0.5589	5.883E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.759E-03	0.0014
Th-230	4.966E-04	0.0003	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.823E-03	0.0025
Th-232	5.523E-02	0.0283	1.788E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.220E-03	0.0032
U-234	5.667E-05	0.0000	1.510E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.124E-03	0.0006
U-235	1.099E-01	0.0564	1.366E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.086E-03	0.0006
U-238	2.328E-02	0.0119	1.286E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-03	0.0006
Total	1.908E+00	0.9782	1.237E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.130E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-02	0.0056
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.650E-01	0.2384
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.603E-01	0.0822
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.455E-03	0.0028
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.974E-03	0.0031
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.951E-03	0.0031
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.838E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E+00	0.5603
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.480E-03	0.0028
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.163E-02	0.0316
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.196E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-01	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.440E-02	0.0125
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.149E-03	0.0035	1.540E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0026
Cs-137	4.539E-01	0.2611	6.053E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.881E-04	0.0002
Np-237	1.575E-01	0.0906	8.020E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.539E-03	0.0015
Pu-238	1.932E-05	0.0000	1.747E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.217E-03	0.0030
Pu-239	4.196E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.738E-03	0.0033
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.737E-03	0.0033
Tc-99	1.170E-05	0.0000	1.364E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.589E-06	0.0000
Th-228	7.586E-01	0.4364	4.095E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.920E-03	0.0011
Th-230	1.139E-03	0.0007	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.826E-03	0.0028
Th-232	1.847E-01	0.1062	1.839E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.024E-03	0.0046
U-234	5.658E-05	0.0000	1.508E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-03	0.0006
U-235	1.097E-01	0.0631	1.364E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-03	0.0006
U-238	2.324E-02	0.0134	1.284E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-03	0.0006
Total	1.695E+00	0.9750	1.222E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.219E-02	0.0243

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.088E-02	0.0063
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.542E-01	0.2612
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-01	0.0921
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.411E-03	0.0031
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.972E-03	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.949E-03	0.0034
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.130E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.606E-01	0.4375
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.126E-03	0.0035
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.929E-01	0.1110
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.194E-03	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-01	0.0638
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.436E-02	0.0140
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.739E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.670E-03	0.0022	1.419E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.221E-03	0.0016
Cs-137	1.433E-01	0.0552	1.912E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.099E-05	0.0000
Np-237	1.451E-01	0.0559	7.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.340E-03	0.0009
Pu-238	1.299E-05	0.0000	1.174E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.506E-03	0.0013
Pu-239	4.147E-05	0.0000	1.906E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.670E-03	0.0022
Pu-240	1.863E-05	0.0000	1.899E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.648E-03	0.0022
Tc-99	9.220E-12	0.0000	1.075E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.558E-12	0.0000
Th-228	1.476E-08	0.0000	7.966E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-11	0.0000
Th-230	3.209E-02	0.0124	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.410E-03	0.0021
Th-232	2.093E+00	0.8059	2.718E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.430E-02	0.0094
U-234	5.908E-05	0.0000	1.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.032E-03	0.0004
U-235	1.009E-01	0.0389	1.321E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-03	0.0004
U-238	2.133E-02	0.0082	1.179E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.017E-03	0.0004
Total	2.542E+00	0.9787	1.185E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.426E-02	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.434E-01	0.0552
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.475E-01	0.0568
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.636E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.902E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.856E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-11	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.480E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.766E-02	0.0145
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.118E+00	0.8154
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-01	0.0393
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.236E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.597E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.219E-03	0.0021	1.306E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.884E-03	0.0015
Cs-137	4.422E-02	0.0176	5.897E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.807E-05	0.0000
Np-237	1.335E-01	0.0532	6.799E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-03	0.0009
Pu-238	8.667E-06	0.0000	7.826E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.337E-03	0.0009
Pu-239	4.098E-05	0.0000	1.883E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.602E-03	0.0022
Pu-240	1.834E-05	0.0000	1.869E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.559E-03	0.0022
Tc-99	5.455E-18	0.0000	6.361E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.472E-18	0.0000
Th-228	1.998E-16	0.0000	1.079E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.058E-19	0.0000
Th-230	6.258E-02	0.0250	1.612E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.333E-03	0.0025
Th-232	2.095E+00	0.8357	2.716E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.430E-02	0.0097
U-234	7.466E-05	0.0000	1.281E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.479E-04	0.0004
U-235	9.275E-02	0.0370	1.315E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.810E-04	0.0004
U-238	1.954E-02	0.0078	1.080E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.324E-04	0.0004
Total	2.453E+00	0.9784	1.122E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.306E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.234E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.424E-02	0.0176
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.357E-01	0.0541
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.424E-03	0.0010
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.831E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.764E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.933E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.003E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.907E-02	0.0275
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.120E+00	0.8455
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.035E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.374E-02	0.0374
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.048E-02	0.0082
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.507E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.690E-03	0.0011	6.707E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.995E-03	0.0008
Cs-137	3.624E-06	0.0000	4.833E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-09	0.0000
Np-237	6.845E-02	0.0272	3.489E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
Pu-238	4.606E-07	0.0000	3.052E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.124E-05	0.0000
Pu-239	3.722E-05	0.0000	1.709E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.085E-03	0.0020
Pu-240	1.614E-05	0.0000	1.645E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.893E-03	0.0019
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.707E-01	0.1075	1.627E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E-02	0.0053
Th-232	2.065E+00	0.8201	2.677E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.395E-02	0.0095
U-234	5.125E-04	0.0002	6.775E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.972E-04	0.0002
U-235	4.785E-02	0.0190	1.295E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.355E-04	0.0003
U-238	9.708E-03	0.0039	5.374E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.637E-04	0.0002
Total	2.465E+00	0.9790	8.959E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.208E-02	0.0207

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-03	0.0019
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.959E-02	0.0276
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.475E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.294E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.073E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.842E-01	0.1129
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.089E+00	0.8297
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.016E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.860E-02	0.0193
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.018E-02	0.0040
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.518E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-15 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.174E-03	0.0005	2.917E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.678E-04	0.0003
Cs-137	2.826E-11	0.0000	3.769E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.794E-14	0.0000
Np-237	2.971E-02	0.0114	1.517E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.808E-04	0.0002
Pu-238	4.078E-07	0.0000	5.417E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.682E-06	0.0000
Pu-239	3.300E-05	0.0000	1.515E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.506E-03	0.0017
Pu-240	1.376E-05	0.0000	1.402E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.171E-03	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.582E-01	0.1763	1.631E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E-02	0.0075
Th-232	2.027E+00	0.7802	2.628E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.351E-02	0.0090
U-234	1.364E-03	0.0005	3.310E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.581E-04	0.0001
U-235	2.181E-02	0.0084	1.208E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.652E-04	0.0002
U-238	4.050E-03	0.0016	2.246E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-04	0.0001
Total	2.544E+00	0.9789	7.796E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.406E-02	0.0208

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.071E-03	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.828E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.021E-02	0.0116
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.144E-06	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.691E-03	0.0018
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.325E-03	0.0017
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.779E-01	0.1839
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E+00	0.7893
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.239E-02	0.0086
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.245E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.599E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-15 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Am-241	Np-237+D	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Am-241	U-233	1.000E+00	3.273E-16	2.288E-15	2.301E-12	8.374E-12	1.054E-10	1.803E-10
Am-241	Th-229+D	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.524E-09
Am-241	ΣDSR(j)		1.090E-02	1.088E-02	1.003E-02	9.234E-03	4.752E-03	2.071E-03
Cs-137+D	Cs-137+D	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Np-237+D	Np-237+D	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237+D	U-233	1.000E+00	3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
Np-237+D	Th-229+D	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Np-237+D	ΣDSR(j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.021E-02
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	U-234	1.000E+00	1.691E-09	5.050E-09	1.341E-07	2.113E-07	2.127E-07	9.227E-08
Pu-238	Th-230	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Pu-238	Ra-226+D	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.159E-09	1.136E-07	3.988E-07
Pu-238	Pb-210+D	1.000E+00	1.270E-19	3.909E-18	2.796E-12	3.103E-11	2.939E-09	1.121E-08
Pu-238	ΣDSR(j)		5.455E-03	5.411E-03	3.636E-03	2.424E-03	9.475E-05	2.144E-06
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
Pu-239	U-235+D	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
Pu-239	Pa-231	1.000E+00	1.521E-16	1.064E-15	1.122E-12	4.284E-12	8.014E-11	2.309E-10
Pu-239	Ac-227+D	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Pu-239	ΣDSR(j)		5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.294E-03	4.691E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	U-236	1.000E+00	1.660E-11	4.977E-11	1.593E-09	3.013E-09	1.013E-08	1.285E-08
Pu-240	Th-232	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Pu-240	Ra-228+D	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Pu-240	Th-228+D	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Pu-240	ΣDSR(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Tc-99	Tc-99	1.000E+00	2.838E-05	2.130E-05	1.679E-11	9.933E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	Ra-226+D	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Th-230	Pb-210+D	1.000E+00	9.944E-08	6.897E-07	4.751E-04	1.300E-03	7.590E-03	1.328E-02
Th-230	ΣDSR(j)		5.480E-03	6.126E-03	3.766E-02	6.907E-02	2.842E-01	4.779E-01

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-15 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	Ra-228+D	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-232	Th-228+D	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-232	∑DSR(j)		6.163E-02	1.929E-01	2.118E+00	2.120E+00	2.089E+00	2.051E+00
U-234	U-234	1.000E+00	1.196E-03	1.194E-03	1.095E-03	1.004E-03	4.980E-04	2.074E-04
U-234	Th-230	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
U-234	Ra-226+D	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.901E-04	1.358E-03
U-234	Pb-210+D	1.000E+00	2.241E-13	3.337E-12	7.887E-08	4.531E-07	1.304E-05	3.847E-05
U-234	∑DSR(j)		1.196E-03	1.194E-03	1.105E-03	1.035E-03	1.016E-03	1.625E-03
U-235+D	U-235+D	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235+D	Pa-231	1.000E+00	4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
U-235+D	Ac-227+D	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
U-235+D	∑DSR(j)		1.110E-01	1.108E-01	1.020E-01	9.374E-02	4.860E-02	2.239E-02
U-238	U-238	5.400E-05	5.716E-08	5.706E-08	5.237E-08	4.799E-08	2.384E-08	9.942E-09
U-238+D	U-238+D	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03
U-238+D	U-234	9.999E-01	1.694E-09	5.075E-09	1.568E-07	2.860E-07	7.070E-07	5.890E-07
U-238+D	Th-230	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
U-238+D	Ra-226+D	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
U-238+D	Pb-210+D	9.999E-01	1.272E-19	3.918E-18	2.985E-12	3.536E-11	5.203E-09	2.800E-08
U-238+D	∑DSR(j)		2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.245E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-15 MREM.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	1.376E+03	1.378E+03	1.495E+03	1.624E+03	3.157E+03	7.242E+03
Cs-137	3.226E+01	3.303E+01	1.046E+02	3.390E+02	4.137E+06	5.304E+11
Np-237	9.355E+01	9.371E+01	1.017E+02	1.105E+02	2.156E+02	4.965E+02
Pu-238	2.750E+03	2.772E+03	4.125E+03	6.189E+03	1.583E+05	6.998E+06
Pu-239	2.511E+03	2.512E+03	2.541E+03	2.572E+03	2.834E+03	3.198E+03
Pu-240	2.521E+03	2.522E+03	2.561E+03	2.602E+03	2.957E+03	3.468E+03
Tc-99	5.286E+05	7.042E+05	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	1.373E+01	1.972E+01	1.014E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	2.737E+03	2.449E+03	3.983E+02	2.172E+02	5.279E+01	3.139E+01
Th-232	2.434E+02	7.776E+01	7.083E+00	7.076E+00	7.180E+00	7.313E+00
U-234	1.254E+04	1.257E+04	1.358E+04	1.449E+04	1.476E+04	9.229E+03
U-235	1.351E+02	1.353E+02	1.471E+02	1.600E+02	3.086E+02	6.700E+02
U-238	6.148E+02	6.158E+02	6.709E+02	7.323E+02	1.474E+03	3.533E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 34.63 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	1.090E-02	1.376E+03	1.029E-02	1.457E+03
Cs-137	1.000E+00	0.000E+00	4.650E-01	3.226E+01	2.059E-01	7.285E+01
Np-237	1.000E+00	0.000E+00	1.603E-01	9.355E+01	1.513E-01	9.912E+01
Pu-238	1.000E+00	0.000E+00	5.455E-03	2.750E+03	4.119E-03	3.642E+03
Pu-239	1.000E+00	0.000E+00	5.974E-03	2.511E+03	5.924E-03	2.532E+03
Pu-240	1.000E+00	0.000E+00	5.951E-03	2.521E+03	5.885E-03	2.549E+03
Tc-99	1.000E+00	0.000E+00	2.838E-05	5.286E+05	1.379E-09	1.087E+10
Th-228	1.000E+00	0.000E+00	1.093E+00	1.373E+01	3.882E-06	3.864E+06
Th-230	1.000E+00	1.000E+03	4.779E-01	3.139E+01	2.782E-02	5.392E+02
Th-232	1.000E+00	68.9 ± 0.1	2.122E+00	7.070E+00	2.085E+00	7.194E+00
U-234	1.000E+00	1.000E+03	1.625E-03	9.229E+03	1.130E-03	1.327E+04
U-235	1.000E+00	0.000E+00	1.110E-01	1.351E+02	1.046E-01	1.434E+02
U-238	1.000E+00	0.000E+00	2.440E-02	6.148E+02	2.297E-02	6.531E+02

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-15 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Np-237	Am-241	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Np-237	Np-237	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237	ΣDOSE (j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.020E-02
U-233	Am-241	1.000E+00	3.273E-16	2.288E-15	2.301E-12	8.374E-12	1.054E-10	1.803E-10
U-233	Np-237	1.000E+00	3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
U-233	ΣDOSE (j)		3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
Th-229	Am-241	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.524E-09
Th-229	Np-237	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Th-229	ΣDOSE (j)		1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Cs-137	Cs-137	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	ΣDOSE (j)		5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
U-234	Pu-238	1.000E+00	1.691E-09	5.050E-09	1.341E-07	2.113E-07	2.127E-07	9.227E-08
U-234	U-234	1.000E+00	1.196E-03	1.194E-03	1.095E-03	1.004E-03	4.980E-04	2.074E-04
U-234	U-238	9.999E-01	1.694E-09	5.075E-09	1.568E-07	2.860E-07	7.070E-07	5.890E-07
U-234	ΣDOSE (j)		1.196E-03	1.194E-03	1.096E-03	1.004E-03	4.989E-04	2.081E-04
Th-230	Pu-238	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	U-234	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
Th-230	U-238	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
Th-230	ΣDOSE (j)		5.157E-03	5.157E-03	5.148E-03	5.138E-03	5.056E-03	4.948E-03
Ra-226	Pu-238	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.159E-09	1.136E-07	3.988E-07
Ra-226	Th-230	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Ra-226	U-234	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.901E-04	1.358E-03
Ra-226	U-238	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
Ra-226	ΣDOSE (j)		3.229E-04	9.683E-04	3.204E-02	6.267E-02	2.720E-01	4.610E-01
Pb-210	Pu-238	1.000E+00	1.270E-19	3.909E-18	2.796E-12	3.103E-11	2.939E-09	1.121E-08
Pb-210	Th-230	1.000E+00	9.944E-08	6.897E-07	4.751E-04	1.300E-03	7.590E-03	1.328E-02
Pb-210	U-234	1.000E+00	2.241E-13	3.337E-12	7.887E-08	4.531E-07	1.304E-05	3.847E-05
Pb-210	U-238	9.999E-01	1.272E-19	3.918E-18	2.985E-12	3.536E-11	5.203E-09	2.800E-08
Pb-210	ΣDOSE (j)		9.944E-08	6.897E-07	4.752E-04	1.301E-03	7.603E-03	1.332E-02
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
U-235	Pu-239	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
U-235	U-235	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235	ΣDOSE (j)		1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-15 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	1.521E-16	1.064E-15	1.122E-12	4.284E-12	8.014E-11	2.309E-10
Pa-231	U-235	1.000E+00	4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
Pa-231	ΣDOSE (j)		4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
Ac-227	Pu-239	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Ac-227	U-235	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Ac-227	ΣDOSE (j)		3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	ΣDOSE (j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
U-236	Pu-240	1.000E+00	1.660E-11	4.977E-11	1.593E-09	3.013E-09	1.013E-08	1.285E-08
Th-232	Pu-240	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	ΣDOSE (j)		5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Ra-228	Pu-240	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Ra-228	Th-232	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Ra-228	ΣDOSE (j)		4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-228	Pu-240	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Th-228	Th-228	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-228	ΣDOSE (j)		1.101E+00	8.122E-01	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Tc-99	Tc-99	1.000E+00	2.838E-05	2.130E-05	1.679E-11	9.933E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.716E-08	5.706E-08	5.237E-08	4.799E-08	2.384E-08	9.942E-09
U-238	U-238	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03
U-238	ΣDOSE (j)		2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-15 MREM.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Individual Nuclide Soil Concentration
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 2.34 seconds

Wildlife Worker

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 25 mrem/yr.

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Summary : Wildlife Area Wildlife Worker Deterministic Run

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Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1(51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1(54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1(55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1(57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1(60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2(1)
B-1	Am-241	3.550E-01	3.552E-01	DCF2(2)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2(3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2(4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(5)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2(6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2(7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2(9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2(10)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2(12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2(13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2(14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2(15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2(16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2(18)
B-1	U-233	3.550E-02	3.552E-02	DCF2(19)
B-1	U-234	3.480E-02	3.478E-02	DCF2(20)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2(21)
B-1	U-236	3.220E-02	3.219E-02	DCF2(22)
B-1	U-238	2.960E-02	2.960E-02	DCF2(23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3(2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3(4)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3(5)
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3(6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3(7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3(9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3(10)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3(12)
D-1	Ra-228+D	2.552E-03	2.553E-03	DCF3(13)
D-1	Tc-99	2.370E-06	2.368E-06	DCF3(14)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.302E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.266E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.890E-04	1.887E-04	DCF3(19)
D-1	U-234	1.810E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(21)
D-1	U-236	1.740E-04	1.739E-04	DCF3(22)
D-1	U-238	1.670E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)
D-5				

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T (2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T (3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T (4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T (5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T (6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T (7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T (8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T (9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC (3)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.610E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.700E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSNS
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSNS
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Contaminated Zone Dimensions Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters Thickness: 0.15 meters Cover Depth: 0.00 meters	Am-241 1.000E+00 Cs-137 1.000E+00 Np-237 1.000E+00 Pu-238 1.000E+00 Pu-239 1.000E+00 Pu-240 1.000E+00 Tc-99 1.000E+00 Th-228 1.000E+00 Th-230 1.000E+00 Th-232 1.000E+00 U-234 1.000E+00 U-235 1.000E+00 U-238 1.000E+00
--	--

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.950E+00	1.739E+00	2.597E+00	2.507E+00	2.518E+00	2.599E+00
M(t):	7.800E-02	6.954E-02	1.039E-01	1.003E-01	1.007E-01	1.039E-01

Maximum TDOSE(t): 2.625E+00 mrem/yr at t = 34.63 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.463E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.816E-03	0.0022	1.455E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.331E-03	0.0016
Cs-137	2.058E-01	0.0784	2.739E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.306E-04	0.0000
Np-237	1.489E-01	0.0567	7.582E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.401E-03	0.0009
Pu-238	1.471E-05	0.0000	1.330E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.971E-03	0.0015
Pu-239	4.162E-05	0.0000	1.913E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.691E-03	0.0022
Pu-240	1.872E-05	0.0000	1.908E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.676E-03	0.0022
Tc-99	7.577E-10	0.0000	8.836E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.217E-10	0.0000
Th-228	3.874E-06	0.0000	2.091E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.808E-09	0.0000
Th-230	2.249E-02	0.0086	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.166E-03	0.0020
Th-232	2.061E+00	0.7850	2.704E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.404E-02	0.0092
U-234	5.686E-05	0.0000	1.427E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.058E-03	0.0004
U-235	1.036E-01	0.0395	1.330E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.042E-03	0.0004
U-238	2.191E-02	0.0083	1.211E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E-03	0.0004
Total	2.569E+00	0.9788	1.207E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.456E-02	0.0208

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.463E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.029E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.059E-01	0.0784
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-01	0.0576
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.119E-03	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.924E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.885E-03	0.0022
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.380E-09	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.884E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.782E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.085E+00	0.7943
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-01	0.0399
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-02	0.0087
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.625E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.160E-03	0.0032	1.541E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.588E-03	0.0024
Cs-137	4.647E-01	0.2383	6.185E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.950E-04	0.0002
Np-237	1.577E-01	0.0809	8.033E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.543E-03	0.0013
Pu-238	1.948E-05	0.0000	1.761E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.259E-03	0.0027
Pu-239	4.197E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Tc-99	1.558E-05	0.0000	1.817E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.278E-05	0.0000
Th-228	1.090E+00	0.5589	5.884E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.760E-03	0.0014
Th-230	4.966E-04	0.0003	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.823E-03	0.0025
Th-232	5.523E-02	0.0283	1.788E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.219E-03	0.0032
U-234	5.667E-05	0.0000	1.511E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-03	0.0006
U-235	1.099E-01	0.0564	1.368E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.087E-03	0.0006
U-238	2.328E-02	0.0119	1.286E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.113E-03	0.0006
Total	1.908E+00	0.9782	1.237E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.130E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-02	0.0056
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.650E-01	0.2384
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.603E-01	0.0822
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.455E-03	0.0028
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.974E-03	0.0031
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.951E-03	0.0031
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.839E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E+00	0.5603
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.480E-03	0.0028
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.162E-02	0.0316
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.194E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-01	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.440E-02	0.0125
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.149E-03	0.0035	1.539E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0026
Cs-137	4.539E-01	0.2611	6.041E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.881E-04	0.0002
Np-237	1.575E-01	0.0906	8.020E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.539E-03	0.0015
Pu-238	1.932E-05	0.0000	1.747E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.217E-03	0.0030
Pu-239	4.196E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.738E-03	0.0033
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.737E-03	0.0033
Tc-99	1.170E-05	0.0000	1.364E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.597E-06	0.0000
Th-228	7.586E-01	0.4364	4.096E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.921E-03	0.0011
Th-230	1.139E-03	0.0007	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.826E-03	0.0028
Th-232	1.847E-01	0.1062	1.839E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.021E-03	0.0046
U-234	5.658E-05	0.0000	1.509E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.120E-03	0.0006
U-235	1.097E-01	0.0631	1.366E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-03	0.0006
U-238	2.324E-02	0.0134	1.284E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.112E-03	0.0006
Total	1.695E+00	0.9750	1.222E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.219E-02	0.0243

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.088E-02	0.0063
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.542E-01	0.2612
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-01	0.0921
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.411E-03	0.0031
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.972E-03	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.949E-03	0.0034
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.131E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.606E-01	0.4375
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.126E-03	0.0035
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.929E-01	0.1110
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.192E-03	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-01	0.0638
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.436E-02	0.0140
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.739E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.670E-03	0.0022	1.418E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.221E-03	0.0016
Cs-137	1.433E-01	0.0552	1.908E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.099E-05	0.0000
Np-237	1.451E-01	0.0559	7.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.340E-03	0.0009
Pu-238	1.299E-05	0.0000	1.174E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.506E-03	0.0013
Pu-239	4.147E-05	0.0000	1.906E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.670E-03	0.0022
Pu-240	1.863E-05	0.0000	1.899E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.648E-03	0.0022
Tc-99	9.220E-12	0.0000	1.075E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.564E-12	0.0000
Th-228	1.476E-08	0.0000	7.967E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-11	0.0000
Th-230	3.209E-02	0.0124	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.411E-03	0.0021
Th-232	2.093E+00	0.8059	2.718E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.428E-02	0.0093
U-234	5.908E-05	0.0000	1.391E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.030E-03	0.0004
U-235	1.009E-01	0.0389	1.323E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-03	0.0004
U-238	2.133E-02	0.0082	1.179E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-03	0.0004
Total	2.542E+00	0.9787	1.185E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.424E-02	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.434E-01	0.0552
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.475E-01	0.0568
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.636E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.902E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.856E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-11	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.480E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.766E-02	0.0145
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.118E+00	0.8154
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-01	0.0393
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.236E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.597E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.219E-03	0.0021	1.305E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.884E-03	0.0015
Cs-137	4.422E-02	0.0176	5.885E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.807E-05	0.0000
Np-237	1.335E-01	0.0532	6.799E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-03	0.0009
Pu-238	8.667E-06	0.0000	7.826E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.337E-03	0.0009
Pu-239	4.098E-05	0.0000	1.883E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.602E-03	0.0022
Pu-240	1.834E-05	0.0000	1.869E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.559E-03	0.0022
Tc-99	5.455E-18	0.0000	6.361E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.475E-18	0.0000
Th-228	1.998E-16	0.0000	1.079E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.059E-19	0.0000
Th-230	6.258E-02	0.0250	1.612E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.334E-03	0.0025
Th-232	2.095E+00	0.8357	2.716E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.428E-02	0.0097
U-234	7.466E-05	0.0000	1.281E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.463E-04	0.0004
U-235	9.275E-02	0.0370	1.317E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.816E-04	0.0004
U-238	1.954E-02	0.0078	1.080E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.351E-04	0.0004
Total	2.453E+00	0.9784	1.121E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.304E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.234E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.424E-02	0.0176
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.357E-01	0.0541
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.424E-03	0.0010
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.831E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.764E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.937E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.003E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.907E-02	0.0275
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.120E+00	0.8455
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.374E-02	0.0374
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.049E-02	0.0082
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.507E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.690E-03	0.0011	6.704E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.995E-03	0.0008
Cs-137	3.624E-06	0.0000	4.823E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-09	0.0000
Np-237	6.845E-02	0.0272	3.489E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
Pu-238	4.606E-07	0.0000	3.052E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.124E-05	0.0000
Pu-239	3.722E-05	0.0000	1.709E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.085E-03	0.0020
Pu-240	1.614E-05	0.0000	1.645E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.893E-03	0.0019
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.707E-01	0.1075	1.627E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E-02	0.0053
Th-232	2.065E+00	0.8201	2.677E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-02	0.0095
U-234	5.125E-04	0.0002	6.778E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.964E-04	0.0002
U-235	4.785E-02	0.0190	1.297E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.359E-04	0.0003
U-238	9.708E-03	0.0039	5.374E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.651E-04	0.0002
Total	2.465E+00	0.9790	8.959E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.206E-02	0.0207

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-03	0.0019
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.959E-02	0.0276
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.475E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.294E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.073E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.842E-01	0.1129
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.089E+00	0.8297
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.016E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.860E-02	0.0193
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.018E-02	0.0040
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.518E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-25 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.174E-03	0.0005	2.915E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.678E-04	0.0003
Cs-137	2.826E-11	0.0000	3.761E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.794E-14	0.0000
Np-237	2.971E-02	0.0114	1.517E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.808E-04	0.0002
Pu-238	4.078E-07	0.0000	5.417E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.681E-06	0.0000
Pu-239	3.300E-05	0.0000	1.515E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.506E-03	0.0017
Pu-240	1.376E-05	0.0000	1.402E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.171E-03	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.582E-01	0.1763	1.631E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E-02	0.0075
Th-232	2.027E+00	0.7802	2.628E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.349E-02	0.0090
U-234	1.364E-03	0.0005	3.312E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.578E-04	0.0001
U-235	2.181E-02	0.0084	1.210E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.654E-04	0.0002
U-238	4.050E-03	0.0016	2.246E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.943E-04	0.0001
Total	2.544E+00	0.9789	7.797E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.404E-02	0.0208

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.071E-03	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.828E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.021E-02	0.0116
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.143E-06	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.691E-03	0.0018
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.325E-03	0.0017
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.779E-01	0.1839
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E+00	0.7893
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.239E-02	0.0086
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.246E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.599E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-25 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Am-241	Np-237+D	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Am-241	U-233	1.000E+00	3.277E-16	2.291E-15	2.305E-12	8.385E-12	1.055E-10	1.806E-10
Am-241	Th-229+D	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.523E-09
Am-241	ΣDSR(j)		1.090E-02	1.088E-02	1.003E-02	9.234E-03	4.752E-03	2.071E-03
Cs-137+D	Cs-137+D	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Np-237+D	Np-237+D	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237+D	U-233	1.000E+00	3.036E-09	9.094E-09	2.816E-07	5.144E-07	1.292E-06	1.098E-06
Np-237+D	Th-229+D	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.970E-06	1.629E-05
Np-237+D	ΣDSR(j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.021E-02
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	U-234	1.000E+00	1.688E-09	5.043E-09	1.339E-07	2.109E-07	2.124E-07	9.212E-08
Pu-238	Th-230	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Pu-238	Ra-226+D	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.160E-09	1.136E-07	3.988E-07
Pu-238	Pb-210+D	1.000E+00	1.270E-19	3.908E-18	2.795E-12	3.102E-11	2.937E-09	1.120E-08
Pu-238	ΣDSR(j)		5.455E-03	5.411E-03	3.636E-03	2.424E-03	9.475E-05	2.143E-06
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
Pu-239	U-235+D	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
Pu-239	Pa-231	1.000E+00	1.522E-16	1.065E-15	1.123E-12	4.286E-12	8.018E-11	2.310E-10
Pu-239	Ac-227+D	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Pu-239	ΣDSR(j)		5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.294E-03	4.691E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	U-236	1.000E+00	1.661E-11	4.980E-11	1.594E-09	3.014E-09	1.013E-08	1.286E-08
Pu-240	Th-232	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Pu-240	Ra-228+D	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Pu-240	Th-228+D	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Pu-240	ΣDSR(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Tc-99	Tc-99	1.000E+00	2.839E-05	2.131E-05	1.679E-11	9.937E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	Ra-226+D	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Th-230	Pb-210+D	1.000E+00	9.939E-08	6.894E-07	4.749E-04	1.300E-03	7.587E-03	1.328E-02
Th-230	ΣDSR(j)		5.480E-03	6.126E-03	3.766E-02	6.907E-02	2.842E-01	4.779E-01

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-25 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	Ra-228+D	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-232	Th-228+D	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-232	∑DSR(j)		6.162E-02	1.929E-01	2.118E+00	2.120E+00	2.089E+00	2.051E+00
U-234	U-234	1.000E+00	1.194E-03	1.192E-03	1.094E-03	1.002E-03	4.972E-04	2.071E-04
U-234	Th-230	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
U-234	Ra-226+D	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.902E-04	1.358E-03
U-234	Pb-210+D	1.000E+00	2.240E-13	3.335E-12	7.884E-08	4.529E-07	1.303E-05	3.845E-05
U-234	∑DSR(j)		1.194E-03	1.192E-03	1.103E-03	1.034E-03	1.016E-03	1.625E-03
U-235+D	U-235+D	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235+D	Pa-231	1.000E+00	4.636E-07	1.390E-06	4.458E-05	8.448E-05	2.895E-04	3.781E-04
U-235+D	Ac-227+D	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
U-235+D	∑DSR(j)		1.110E-01	1.108E-01	1.020E-01	9.374E-02	4.860E-02	2.239E-02
U-238	U-238	5.400E-05	5.733E-08	5.723E-08	5.253E-08	4.813E-08	2.391E-08	9.971E-09
U-238+D	U-238+D	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.244E-03
U-238+D	U-234	9.999E-01	1.692E-09	5.067E-09	1.566E-07	2.855E-07	7.060E-07	5.881E-07
U-238+D	Th-230	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
U-238+D	Ra-226+D	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
U-238+D	Pb-210+D	9.999E-01	1.271E-19	3.916E-18	2.984E-12	3.534E-11	5.201E-09	2.799E-08
U-238+D	∑DSR(j)		2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.246E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-25 MREM.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t = 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	2.293E+03	2.297E+03	2.492E+03	2.708E+03	5.261E+03	1.207E+04
Cs-137	5.376E+01	5.504E+01	1.743E+02	5.651E+02	6.894E+06	8.841E+11
Np-237	1.559E+02	1.562E+02	1.695E+02	1.842E+02	3.593E+02	8.275E+02
Pu-238	4.583E+03	4.621E+03	6.876E+03	1.032E+04	2.639E+05	1.166E+07
Pu-239	4.185E+03	4.186E+03	4.236E+03	4.287E+03	4.723E+03	5.330E+03
Pu-240	4.201E+03	4.203E+03	4.269E+03	4.337E+03	4.928E+03	5.780E+03
Tc-99	8.807E+05	1.173E+06	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	2.288E+01	3.287E+01	1.690E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	4.562E+03	4.081E+03	6.639E+02	3.619E+02	8.798E+01	5.232E+01
Th-232	4.057E+02	1.296E+02	1.181E+01	1.179E+01	1.197E+01	1.219E+01
U-234	2.094E+04	2.098E+04	2.266E+04	2.418E+04	2.461E+04	1.539E+04
U-235	2.251E+02	2.255E+02	2.452E+02	2.667E+02	5.144E+02	1.117E+03
U-238	1.024E+03	1.026E+03	1.118E+03	1.220E+03	2.456E+03	5.888E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 34.63 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	1.090E-02	2.293E+03	1.029E-02	2.429E+03
Cs-137	1.000E+00	0.000E+00	4.650E-01	5.376E+01	2.059E-01	1.214E+02
Np-237	1.000E+00	0.000E+00	1.603E-01	1.559E+02	1.513E-01	1.652E+02
Pu-238	1.000E+00	0.000E+00	5.455E-03	4.583E+03	4.119E-03	6.070E+03
Pu-239	1.000E+00	0.000E+00	5.974E-03	4.185E+03	5.924E-03	4.220E+03
Pu-240	1.000E+00	0.000E+00	5.951E-03	4.201E+03	5.885E-03	4.248E+03
Tc-99	1.000E+00	0.000E+00	2.839E-05	8.807E+05	1.380E-09	*1.697E+10
Th-228	1.000E+00	0.000E+00	1.093E+00	2.288E+01	3.884E-06	6.437E+06
Th-230	1.000E+00	1.000E+03	4.779E-01	5.232E+01	2.782E-02	8.987E+02
Th-232	1.000E+00	68.9 ± 0.1	2.122E+00	1.178E+01	2.085E+00	1.199E+01
U-234	1.000E+00	1.000E+03	1.625E-03	1.539E+04	1.129E-03	2.215E+04
U-235	1.000E+00	0.000E+00	1.110E-01	2.251E+02	1.046E-01	2.389E+02
U-238	1.000E+00	0.000E+00	2.440E-02	1.024E+03	2.297E-02	1.088E+03

*At specific activity limit

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-25 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Np-237	Am-241	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Np-237	Np-237	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237	ΣDOSE (j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.020E-02
U-233	Am-241	1.000E+00	3.277E-16	2.291E-15	2.305E-12	8.385E-12	1.055E-10	1.806E-10
U-233	Np-237	1.000E+00	3.036E-09	9.094E-09	2.816E-07	5.144E-07	1.292E-06	1.098E-06
U-233	ΣDOSE (j)		3.036E-09	9.094E-09	2.816E-07	5.144E-07	1.292E-06	1.098E-06
Th-229	Am-241	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.523E-09
Th-229	Np-237	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.970E-06	1.629E-05
Th-229	ΣDOSE (j)		1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Cs-137	Cs-137	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	ΣDOSE (j)		5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
U-234	Pu-238	1.000E+00	1.688E-09	5.043E-09	1.339E-07	2.109E-07	2.124E-07	9.212E-08
U-234	U-234	1.000E+00	1.194E-03	1.192E-03	1.094E-03	1.002E-03	4.972E-04	2.071E-04
U-234	U-238	9.999E-01	1.692E-09	5.067E-09	1.566E-07	2.855E-07	7.060E-07	5.881E-07
U-234	ΣDOSE (j)		1.194E-03	1.192E-03	1.094E-03	1.003E-03	4.981E-04	2.077E-04
Th-230	Pu-238	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	U-234	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
Th-230	U-238	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
Th-230	ΣDOSE (j)		5.157E-03	5.157E-03	5.148E-03	5.138E-03	5.056E-03	4.948E-03
Ra-226	Pu-238	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.160E-09	1.136E-07	3.988E-07
Ra-226	Th-230	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Ra-226	U-234	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.902E-04	1.358E-03
Ra-226	U-238	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
Ra-226	ΣDOSE (j)		3.229E-04	9.684E-04	3.205E-02	6.267E-02	2.720E-01	4.610E-01
Pb-210	Pu-238	1.000E+00	1.270E-19	3.908E-18	2.795E-12	3.102E-11	2.937E-09	1.120E-08
Pb-210	Th-230	1.000E+00	9.939E-08	6.894E-07	4.749E-04	1.300E-03	7.587E-03	1.328E-02
Pb-210	U-234	1.000E+00	2.240E-13	3.335E-12	7.884E-08	4.529E-07	1.303E-05	3.845E-05
Pb-210	U-238	9.999E-01	1.271E-19	3.916E-18	2.984E-12	3.534E-11	5.201E-09	2.799E-08
Pb-210	ΣDOSE (j)		9.939E-08	6.894E-07	4.750E-04	1.300E-03	7.600E-03	1.332E-02
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
U-235	Pu-239	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
U-235	U-235	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235	ΣDOSE (j)		1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	1.522E-16	1.065E-15	1.123E-12	4.286E-12	8.018E-11	2.310E-10
Pa-231	U-235	1.000E+00	4.636E-07	1.390E-06	4.458E-05	8.448E-05	2.895E-04	3.781E-04
Pa-231	ΣDOSE (j)		4.636E-07	1.390E-06	4.458E-05	8.448E-05	2.895E-04	3.781E-04
Ac-227	Pu-239	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Ac-227	U-235	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Ac-227	ΣDOSE (j)		3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	ΣDOSE (j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
U-236	Pu-240	1.000E+00	1.661E-11	4.980E-11	1.594E-09	3.014E-09	1.013E-08	1.286E-08
Th-232	Pu-240	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	ΣDOSE (j)		5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Ra-228	Pu-240	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Ra-228	Th-232	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Ra-228	ΣDOSE (j)		4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-228	Pu-240	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Th-228	Th-228	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-228	ΣDOSE (j)		1.101E+00	8.122E-01	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Tc-99	Tc-99	1.000E+00	2.839E-05	2.131E-05	1.679E-11	9.937E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.733E-08	5.723E-08	5.253E-08	4.813E-08	2.391E-08	9.971E-09
U-238	U-238	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.244E-03
U-238	ΣDOSE (j)		2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.244E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Individual Nuclide Soil Concentration
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 2.40 seconds

Wildlife Worker

The following summary report includes the single radionuclide soil guidelines based on unit concentration for targeted radionuclides and a target dose of 100 mrem/yr.

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Summary : Wildlife Area Wildlife Worker Deterministic Run

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Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1(51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1(54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1(55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1(57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1(60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2(1)
B-1	Am-241	3.550E-01	3.552E-01	DCF2(2)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2(3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2(4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(5)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2(6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2(7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2(9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2(10)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2(12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2(13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2(14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2(15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2(16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2(18)
B-1	U-233	3.550E-02	3.552E-02	DCF2(19)
B-1	U-234	3.480E-02	3.478E-02	DCF2(20)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2(21)
B-1	U-236	3.220E-02	3.219E-02	DCF2(22)
B-1	U-238	2.960E-02	2.960E-02	DCF2(23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3(2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3(4)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3(5)
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3(6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3(7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3(9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3(10)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3(12)
D-1	Ra-228+D	2.552E-03	2.553E-03	DCF3(13)
D-1	Tc-99	2.370E-06	2.368E-06	DCF3(14)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.302E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.266E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.890E-04	1.887E-04	DCF3(19)
D-1	U-234	1.810E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(21)
D-1	U-236	1.740E-04	1.739E-04	DCF3(22)
D-1	U-238	1.670E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+02	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T (2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T (3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T (4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T (5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T (6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T (7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T (8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T (9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC (3)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.610E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.700E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSNS
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSNS
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Contaminated Zone Dimensions Initial Soil Concentrations, pCi/g

<p>Area: 20000.00 square meters</p> <p>Thickness: 0.15 meters</p> <p>Cover Depth: 0.00 meters</p>	<p>Am-241 1.000E+00</p> <p>Cs-137 1.000E+00</p> <p>Np-237 1.000E+00</p> <p>Pu-238 1.000E+00</p> <p>Pu-239 1.000E+00</p> <p>Pu-240 1.000E+00</p> <p>Tc-99 1.000E+00</p> <p>Th-228 1.000E+00</p> <p>Th-230 1.000E+00</p> <p>Th-232 1.000E+00</p> <p>U-234 1.000E+00</p> <p>U-235 1.000E+00</p> <p>U-238 1.000E+00</p>
---	---

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.950E+00	1.739E+00	2.597E+00	2.507E+00	2.518E+00	2.599E+00
M(t):	1.950E-02	1.739E-02	2.597E-02	2.507E-02	2.518E-02	2.599E-02

Maximum TDOSE(t): 2.625E+00 mrem/yr at t = 34.63 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.463E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.816E-03	0.0022	1.455E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.331E-03	0.0016
Cs-137	2.058E-01	0.0784	2.739E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.306E-04	0.0000
Np-237	1.489E-01	0.0567	7.582E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.401E-03	0.0009
Pu-238	1.471E-05	0.0000	1.330E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.971E-03	0.0015
Pu-239	4.162E-05	0.0000	1.913E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.691E-03	0.0022
Pu-240	1.872E-05	0.0000	1.908E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.676E-03	0.0022
Tc-99	7.577E-10	0.0000	8.836E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.217E-10	0.0000
Th-228	3.874E-06	0.0000	2.091E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.808E-09	0.0000
Th-230	2.249E-02	0.0086	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.166E-03	0.0020
Th-232	2.061E+00	0.7850	2.704E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.404E-02	0.0092
U-234	5.686E-05	0.0000	1.427E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.058E-03	0.0004
U-235	1.036E-01	0.0395	1.330E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.042E-03	0.0004
U-238	2.191E-02	0.0083	1.211E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E-03	0.0004
Total	2.569E+00	0.9788	1.207E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.456E-02	0.0208

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.463E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.029E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.059E-01	0.0784
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-01	0.0576
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.119E-03	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.924E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.885E-03	0.0022
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.380E-09	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.884E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.782E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.085E+00	0.7943
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-01	0.0399
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-02	0.0087
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.625E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run
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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.160E-03	0.0032	1.541E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.588E-03	0.0024
Cs-137	4.647E-01	0.2383	6.185E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.950E-04	0.0002
Np-237	1.577E-01	0.0809	8.033E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.543E-03	0.0013
Pu-238	1.948E-05	0.0000	1.761E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.259E-03	0.0027
Pu-239	4.197E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Tc-99	1.558E-05	0.0000	1.817E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.278E-05	0.0000
Th-228	1.090E+00	0.5589	5.884E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.760E-03	0.0014
Th-230	4.966E-04	0.0003	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.823E-03	0.0025
Th-232	5.523E-02	0.0283	1.788E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.219E-03	0.0032
U-234	5.667E-05	0.0000	1.511E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-03	0.0006
U-235	1.099E-01	0.0564	1.368E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.087E-03	0.0006
U-238	2.328E-02	0.0119	1.286E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.113E-03	0.0006
Total	1.908E+00	0.9782	1.237E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.130E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-02	0.0056
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.650E-01	0.2384
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.603E-01	0.0822
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.455E-03	0.0028
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.974E-03	0.0031
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.951E-03	0.0031
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.839E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E+00	0.5603
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.480E-03	0.0028
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.162E-02	0.0316
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.194E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-01	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.440E-02	0.0125
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.149E-03	0.0035	1.539E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0026
Cs-137	4.539E-01	0.2611	6.041E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.881E-04	0.0002
Np-237	1.575E-01	0.0906	8.020E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.539E-03	0.0015
Pu-238	1.932E-05	0.0000	1.747E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.217E-03	0.0030
Pu-239	4.196E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.738E-03	0.0033
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.737E-03	0.0033
Tc-99	1.170E-05	0.0000	1.364E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.597E-06	0.0000
Th-228	7.586E-01	0.4364	4.096E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.921E-03	0.0011
Th-230	1.139E-03	0.0007	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.826E-03	0.0028
Th-232	1.847E-01	0.1062	1.839E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.021E-03	0.0046
U-234	5.658E-05	0.0000	1.509E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.120E-03	0.0006
U-235	1.097E-01	0.0631	1.366E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-03	0.0006
U-238	2.324E-02	0.0134	1.284E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.112E-03	0.0006
Total	1.695E+00	0.9750	1.222E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.219E-02	0.0243

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.088E-02	0.0063
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.542E-01	0.2612
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-01	0.0921
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.411E-03	0.0031
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.972E-03	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.949E-03	0.0034
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.131E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.606E-01	0.4375
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.126E-03	0.0035
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.929E-01	0.1110
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.192E-03	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-01	0.0638
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.436E-02	0.0140
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.739E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run
 File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.670E-03	0.0022	1.418E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.221E-03	0.0016
Cs-137	1.433E-01	0.0552	1.908E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.099E-05	0.0000
Np-237	1.451E-01	0.0559	7.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.340E-03	0.0009
Pu-238	1.299E-05	0.0000	1.174E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.506E-03	0.0013
Pu-239	4.147E-05	0.0000	1.906E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.670E-03	0.0022
Pu-240	1.863E-05	0.0000	1.899E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.648E-03	0.0022
Tc-99	9.220E-12	0.0000	1.075E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.564E-12	0.0000
Th-228	1.476E-08	0.0000	7.967E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-11	0.0000
Th-230	3.209E-02	0.0124	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.411E-03	0.0021
Th-232	2.093E+00	0.8059	2.718E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.428E-02	0.0093
U-234	5.908E-05	0.0000	1.391E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.030E-03	0.0004
U-235	1.009E-01	0.0389	1.323E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-03	0.0004
U-238	2.133E-02	0.0082	1.179E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-03	0.0004
Total	2.542E+00	0.9787	1.185E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.424E-02	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.434E-01	0.0552
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.475E-01	0.0568
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.636E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.902E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.856E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-11	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.480E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.766E-02	0.0145
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.118E+00	0.8154
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-01	0.0393
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.236E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.597E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run
 File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.219E-03	0.0021	1.305E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.884E-03	0.0015
Cs-137	4.422E-02	0.0176	5.885E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.807E-05	0.0000
Np-237	1.335E-01	0.0532	6.799E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-03	0.0009
Pu-238	8.667E-06	0.0000	7.826E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.337E-03	0.0009
Pu-239	4.098E-05	0.0000	1.883E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.602E-03	0.0022
Pu-240	1.834E-05	0.0000	1.869E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.559E-03	0.0022
Tc-99	5.455E-18	0.0000	6.361E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.475E-18	0.0000
Th-228	1.998E-16	0.0000	1.079E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.059E-19	0.0000
Th-230	6.258E-02	0.0250	1.612E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.334E-03	0.0025
Th-232	2.095E+00	0.8357	2.716E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.428E-02	0.0097
U-234	7.466E-05	0.0000	1.281E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.463E-04	0.0004
U-235	9.275E-02	0.0370	1.317E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.816E-04	0.0004
U-238	1.954E-02	0.0078	1.080E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.351E-04	0.0004
Total	2.453E+00	0.9784	1.121E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.304E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.234E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.424E-02	0.0176
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.357E-01	0.0541
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.424E-03	0.0010
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.831E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.764E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.937E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.003E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.907E-02	0.0275
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.120E+00	0.8455
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.374E-02	0.0374
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.049E-02	0.0082
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.507E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run
 File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.690E-03	0.0011	6.704E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.995E-03	0.0008
Cs-137	3.624E-06	0.0000	4.823E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-09	0.0000
Np-237	6.845E-02	0.0272	3.489E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
Pu-238	4.606E-07	0.0000	3.052E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.124E-05	0.0000
Pu-239	3.722E-05	0.0000	1.709E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.085E-03	0.0020
Pu-240	1.614E-05	0.0000	1.645E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.893E-03	0.0019
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.707E-01	0.1075	1.627E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E-02	0.0053
Th-232	2.065E+00	0.8201	2.677E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-02	0.0095
U-234	5.125E-04	0.0002	6.778E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.964E-04	0.0002
U-235	4.785E-02	0.0190	1.297E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.359E-04	0.0003
U-238	9.708E-03	0.0039	5.374E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.651E-04	0.0002
Total	2.465E+00	0.9790	8.959E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.206E-02	0.0207

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-03	0.0019
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.959E-02	0.0276
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.475E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.294E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.073E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.842E-01	0.1129
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.089E+00	0.8297
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.016E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.860E-02	0.0193
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.018E-02	0.0040
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.518E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run
 File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-100 MREM.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.174E-03	0.0005	2.915E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.678E-04	0.0003
Cs-137	2.826E-11	0.0000	3.761E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.794E-14	0.0000
Np-237	2.971E-02	0.0114	1.517E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.808E-04	0.0002
Pu-238	4.078E-07	0.0000	5.417E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.681E-06	0.0000
Pu-239	3.300E-05	0.0000	1.515E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.506E-03	0.0017
Pu-240	1.376E-05	0.0000	1.402E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.171E-03	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.582E-01	0.1763	1.631E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E-02	0.0075
Th-232	2.027E+00	0.7802	2.628E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.349E-02	0.0090
U-234	1.364E-03	0.0005	3.312E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.578E-04	0.0001
U-235	2.181E-02	0.0084	1.210E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.654E-04	0.0002
U-238	4.050E-03	0.0016	2.246E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.943E-04	0.0001
Total	2.544E+00	0.9789	7.797E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.404E-02	0.0208

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.071E-03	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.828E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.021E-02	0.0116
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.143E-06	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.691E-03	0.0018
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.325E-03	0.0017
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.779E-01	0.1839
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E+00	0.7893
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.239E-02	0.0086
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.246E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.599E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-100 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Am-241	Np-237+D	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Am-241	U-233	1.000E+00	3.277E-16	2.291E-15	2.305E-12	8.385E-12	1.055E-10	1.806E-10
Am-241	Th-229+D	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.523E-09
Am-241	ΣDSR(j)		1.090E-02	1.088E-02	1.003E-02	9.234E-03	4.752E-03	2.071E-03
Cs-137+D	Cs-137+D	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Np-237+D	Np-237+D	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237+D	U-233	1.000E+00	3.036E-09	9.094E-09	2.816E-07	5.144E-07	1.292E-06	1.098E-06
Np-237+D	Th-229+D	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.970E-06	1.629E-05
Np-237+D	ΣDSR(j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.021E-02
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	U-234	1.000E+00	1.688E-09	5.043E-09	1.339E-07	2.109E-07	2.124E-07	9.212E-08
Pu-238	Th-230	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Pu-238	Ra-226+D	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.160E-09	1.136E-07	3.988E-07
Pu-238	Pb-210+D	1.000E+00	1.270E-19	3.908E-18	2.795E-12	3.102E-11	2.937E-09	1.120E-08
Pu-238	ΣDSR(j)		5.455E-03	5.411E-03	3.636E-03	2.424E-03	9.475E-05	2.143E-06
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
Pu-239	U-235+D	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
Pu-239	Pa-231	1.000E+00	1.522E-16	1.065E-15	1.123E-12	4.286E-12	8.018E-11	2.310E-10
Pu-239	Ac-227+D	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Pu-239	ΣDSR(j)		5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.294E-03	4.691E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	U-236	1.000E+00	1.661E-11	4.980E-11	1.594E-09	3.014E-09	1.013E-08	1.286E-08
Pu-240	Th-232	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Pu-240	Ra-228+D	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Pu-240	Th-228+D	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Pu-240	ΣDSR(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Tc-99	Tc-99	1.000E+00	2.839E-05	2.131E-05	1.679E-11	9.937E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	Ra-226+D	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Th-230	Pb-210+D	1.000E+00	9.939E-08	6.894E-07	4.749E-04	1.300E-03	7.587E-03	1.328E-02
Th-230	ΣDSR(j)		5.480E-03	6.126E-03	3.766E-02	6.907E-02	2.842E-01	4.779E-01

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-100 MREM.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	Ra-228+D	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-232	Th-228+D	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-232	ΣDSR(j)		6.162E-02	1.929E-01	2.118E+00	2.120E+00	2.089E+00	2.051E+00
U-234	U-234	1.000E+00	1.194E-03	1.192E-03	1.094E-03	1.002E-03	4.972E-04	2.071E-04
U-234	Th-230	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
U-234	Ra-226+D	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.902E-04	1.358E-03
U-234	Pb-210+D	1.000E+00	2.240E-13	3.335E-12	7.884E-08	4.529E-07	1.303E-05	3.845E-05
U-234	ΣDSR(j)		1.194E-03	1.192E-03	1.103E-03	1.034E-03	1.016E-03	1.625E-03
U-235+D	U-235+D	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235+D	Pa-231	1.000E+00	4.636E-07	1.390E-06	4.458E-05	8.448E-05	2.895E-04	3.781E-04
U-235+D	Ac-227+D	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
U-235+D	ΣDSR(j)		1.110E-01	1.108E-01	1.020E-01	9.374E-02	4.860E-02	2.239E-02
U-238	U-238	5.400E-05	5.733E-08	5.723E-08	5.253E-08	4.813E-08	2.391E-08	9.971E-09
U-238+D	U-238+D	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.244E-03
U-238+D	U-234	9.999E-01	1.692E-09	5.067E-09	1.566E-07	2.855E-07	7.060E-07	5.881E-07
U-238+D	Th-230	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
U-238+D	Ra-226+D	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
U-238+D	Pb-210+D	9.999E-01	1.271E-19	3.916E-18	2.984E-12	3.534E-11	5.201E-09	2.799E-08
U-238+D	ΣDSR(j)		2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.246E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-100 MREM.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	9.173E+03	9.188E+03	9.967E+03	1.083E+04	2.104E+04	4.828E+04
Cs-137	2.151E+02	2.202E+02	6.972E+02	2.260E+03	2.758E+07	3.536E+12
Np-237	6.237E+02	6.247E+02	6.780E+02	7.370E+02	1.437E+03	3.310E+03
Pu-238	1.833E+04	1.848E+04	2.750E+04	4.126E+04	1.055E+06	4.665E+07
Pu-239	1.674E+04	1.674E+04	1.694E+04	1.715E+04	1.889E+04	2.132E+04
Pu-240	1.681E+04	1.681E+04	1.708E+04	1.735E+04	1.971E+04	2.312E+04
Tc-99	3.523E+06	4.693E+06	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	9.151E+01	1.315E+02	6.759E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	1.825E+04	1.632E+04	2.655E+03	1.448E+03	3.519E+02	2.093E+02
Th-232	1.623E+03	5.184E+02	4.722E+01	4.717E+01	4.787E+01	4.875E+01
U-234	8.376E+04	8.390E+04	9.065E+04	9.673E+04	9.846E+04	6.154E+04
U-235	9.006E+02	9.021E+02	9.809E+02	1.067E+03	2.058E+03	4.467E+03
U-238	4.098E+03	4.105E+03	4.472E+03	4.881E+03	9.825E+03	2.355E+04

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 34.63 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	1.090E-02	9.173E+03	1.029E-02	9.716E+03
Cs-137	1.000E+00	0.000E+00	4.650E-01	2.151E+02	2.059E-01	4.856E+02
Np-237	1.000E+00	0.000E+00	1.603E-01	6.237E+02	1.513E-01	6.608E+02
Pu-238	1.000E+00	0.000E+00	5.455E-03	1.833E+04	4.119E-03	2.428E+04
Pu-239	1.000E+00	0.000E+00	5.974E-03	1.674E+04	5.924E-03	1.688E+04
Pu-240	1.000E+00	0.000E+00	5.951E-03	1.681E+04	5.885E-03	1.699E+04
Tc-99	1.000E+00	0.000E+00	2.839E-05	3.523E+06	1.380E-09	*1.697E+10
Th-228	1.000E+00	0.000E+00	1.093E+00	9.151E+01	3.884E-06	2.575E+07
Th-230	1.000E+00	1.000E+03	4.779E-01	2.093E+02	2.782E-02	3.595E+03
Th-232	1.000E+00	68.9 ± 0.1	2.122E+00	4.713E+01	2.085E+00	4.796E+01
U-234	1.000E+00	1.000E+03	1.625E-03	6.154E+04	1.129E-03	8.860E+04
U-235	1.000E+00	0.000E+00	1.110E-01	9.006E+02	1.046E-01	9.557E+02
U-238	1.000E+00	0.000E+00	2.440E-02	4.098E+03	2.297E-02	4.354E+03

*At specific activity limit

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-100 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Np-237	Am-241	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Np-237	Np-237	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237	ΣDOSE (j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.020E-02
U-233	Am-241	1.000E+00	3.277E-16	2.291E-15	2.305E-12	8.385E-12	1.055E-10	1.806E-10
U-233	Np-237	1.000E+00	3.036E-09	9.094E-09	2.816E-07	5.144E-07	1.292E-06	1.098E-06
U-233	ΣDOSE (j)		3.036E-09	9.094E-09	2.816E-07	5.144E-07	1.292E-06	1.098E-06
Th-229	Am-241	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.523E-09
Th-229	Np-237	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.970E-06	1.629E-05
Th-229	ΣDOSE (j)		1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Cs-137	Cs-137	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	ΣDOSE (j)		5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
U-234	Pu-238	1.000E+00	1.688E-09	5.043E-09	1.339E-07	2.109E-07	2.124E-07	9.212E-08
U-234	U-234	1.000E+00	1.194E-03	1.192E-03	1.094E-03	1.002E-03	4.972E-04	2.071E-04
U-234	U-238	9.999E-01	1.692E-09	5.067E-09	1.566E-07	2.855E-07	7.060E-07	5.881E-07
U-234	ΣDOSE (j)		1.194E-03	1.192E-03	1.094E-03	1.003E-03	4.981E-04	2.077E-04
Th-230	Pu-238	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	U-234	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
Th-230	U-238	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
Th-230	ΣDOSE (j)		5.157E-03	5.157E-03	5.148E-03	5.138E-03	5.056E-03	4.948E-03
Ra-226	Pu-238	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.160E-09	1.136E-07	3.988E-07
Ra-226	Th-230	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Ra-226	U-234	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.902E-04	1.358E-03
Ra-226	U-238	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
Ra-226	ΣDOSE (j)		3.229E-04	9.684E-04	3.205E-02	6.267E-02	2.720E-01	4.610E-01
Pb-210	Pu-238	1.000E+00	1.270E-19	3.908E-18	2.795E-12	3.102E-11	2.937E-09	1.120E-08
Pb-210	Th-230	1.000E+00	9.939E-08	6.894E-07	4.749E-04	1.300E-03	7.587E-03	1.328E-02
Pb-210	U-234	1.000E+00	2.240E-13	3.335E-12	7.884E-08	4.529E-07	1.303E-05	3.845E-05
Pb-210	U-238	9.999E-01	1.271E-19	3.916E-18	2.984E-12	3.534E-11	5.201E-09	2.799E-08
Pb-210	ΣDOSE (j)		9.939E-08	6.894E-07	4.750E-04	1.300E-03	7.600E-03	1.332E-02
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
U-235	Pu-239	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
U-235	U-235	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235	ΣDOSE (j)		1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-100 MREM.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	1.522E-16	1.065E-15	1.123E-12	4.286E-12	8.018E-11	2.310E-10
Pa-231	U-235	1.000E+00	4.636E-07	1.390E-06	4.458E-05	8.448E-05	2.895E-04	3.781E-04
Pa-231	ΣDOSE (j)		4.636E-07	1.390E-06	4.458E-05	8.448E-05	2.895E-04	3.781E-04
Ac-227	Pu-239	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Ac-227	U-235	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Ac-227	ΣDOSE (j)		3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	ΣDOSE (j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
U-236	Pu-240	1.000E+00	1.661E-11	4.980E-11	1.594E-09	3.014E-09	1.013E-08	1.286E-08
Th-232	Pu-240	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	ΣDOSE (j)		5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Ra-228	Pu-240	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Ra-228	Th-232	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Ra-228	ΣDOSE (j)		4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-228	Pu-240	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Th-228	Th-228	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-228	ΣDOSE (j)		1.101E+00	8.122E-01	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Tc-99	Tc-99	1.000E+00	2.839E-05	2.131E-05	1.679E-11	9.937E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.733E-08	5.723E-08	5.253E-08	4.813E-08	2.391E-08	9.971E-09
U-238	U-238	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.244E-03
U-238	ΣDOSE (j)		2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.244E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-100 MREM.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 2.36 seconds

Wildlife Worker

*The following summary report includes
the peak dose from cumulative
radionuclide inventory.*

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Summary : Wildlife Area Wildlife Worker Deterministic Run

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Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(1)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(2)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(3)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(4)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(5)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(6)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(7)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(8)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(9)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(10)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(11)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(12)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(13)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(14)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(15)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(16)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(17)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(18)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(19)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(20)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(21)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(22)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(23)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(24)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(25)
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(26)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(27)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(28)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(29)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(30)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(31)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(32)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2(1)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2(2)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(3)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2(4)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2(5)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(6)
B-1	U-234	3.480E-02	3.478E-02	DCF2(7)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2(8)
B-1	U-238	2.960E-02	2.960E-02	DCF2(9)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(10)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(2)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3(3)

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3(4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3(5)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(6)
D-1	U-234	1.810E-04	1.813E-04	DCF3(7)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(8)
D-1	U-238	1.670E-04	1.665E-04	DCF3(9)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(10)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(2,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(2,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(3,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(7,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(7,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(8,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(8,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC (1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC (1,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC (2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (2,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC (3,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC (3,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC (4,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC (5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC (5,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC (6,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (6,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (7,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (7,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (8,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (8,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (9,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (9,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (10,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (10,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETRG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T (2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T (3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T (4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T (5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T (6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T (7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T (8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T (9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	9.100E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): U-234	3.500E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	4.100E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	1.300E+02	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(9)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(7)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(8)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(9)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.610E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.700E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Cs-137	9.100E+00
Thickness:	0.15 meters	U-234	3.500E+02
Cover Depth:	0.00 meters	U-235	4.100E+01
		U-238	1.300E+02

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.237E+01	1.226E+01	8.778E+00	7.271E+00	3.671E+00	2.039E+00
M(t):	1.237E+01	1.226E+01	8.778E+00	7.271E+00	3.671E+00	2.039E+00

Maximum TDOSE(t): 1.237E+01 mrem/yr at t = 0.000E+00 years

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.229E+00	0.3417	5.628E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.684E-03	0.0002
U-234	1.984E-02	0.0016	5.289E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.928E-01	0.0317
U-235	4.508E+00	0.3643	5.609E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.456E-02	0.0036
U-238	3.026E+00	0.2445	1.672E-03	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.448E-01	0.0117
Total	1.178E+01	0.9521	7.522E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.847E-01	0.0473

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.231E+00	0.3420
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.179E-01	0.0338
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.553E+00	0.3679
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.172E+00	0.2564
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.237E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.130E+00	0.3369	5.497E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.622E-03	0.0002
U-234	1.980E-02	0.0016	5.280E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.921E-01	0.0320
U-235	4.500E+00	0.3670	5.601E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.449E-02	0.0036
U-238	3.021E+00	0.2463	1.669E-03	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.445E-01	0.0118
Total	1.167E+01	0.9518	7.510E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.837E-01	0.0476

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E+00	0.3371
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.172E-01	0.0340
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.545E+00	0.3706
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.167E+00	0.2583
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.226E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.304E+00	0.1486	1.736E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.280E-04	0.0001
U-234	2.068E-02	0.0024	4.869E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.606E-01	0.0411
U-235	4.137E+00	0.4713	5.426E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.208E-02	0.0048
U-238	2.773E+00	0.3158	1.533E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E-01	0.0151
Total	8.235E+00	0.9381	6.944E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.361E-01	0.0611

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.305E+00	0.1487
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.861E-01	0.0440
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.180E+00	0.4762
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.907E+00	0.3311
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.778E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.024E-01	0.0553	5.355E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.554E-04	0.0000
U-234	2.613E-02	0.0036	4.485E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.312E-01	0.0456
U-235	3.803E+00	0.5230	5.400E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.025E-02	0.0055
U-238	2.540E+00	0.3494	1.404E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.216E-01	0.0167
Total	6.771E+00	0.9313	6.430E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.933E-01	0.0678

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.026E-01	0.0554
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.618E-01	0.0498
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.843E+00	0.5286
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.663E+00	0.3663
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.271E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	3.298E-05	0.0000	4.389E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.093E-08	0.0000
U-234	1.794E-01	0.0489	2.372E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-01	0.0473
U-235	1.962E+00	0.5344	5.317E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.017E-02	0.0082
U-238	1.262E+00	0.3437	6.986E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.046E-02	0.0165
Total	3.403E+00	0.9270	3.603E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.644E-01	0.0720

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.300E-05	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.555E-01	0.0968
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.993E+00	0.5428
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.323E+00	0.3604
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.671E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.572E-10	0.0000	3.423E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.632E-13	0.0000
U-234	4.773E-01	0.2342	1.159E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.022E-02	0.0443
U-235	8.942E-01	0.4386	4.962E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.318E-02	0.0114
U-238	5.264E-01	0.2582	2.919E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.526E-02	0.0124
Total	1.898E+00	0.9310	1.947E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.387E-01	0.0680

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.573E-10	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.687E-01	0.2790
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.179E-01	0.4503
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.520E-01	0.2708
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.039E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Wildlife Area Wildlife Worker Deterministic Run

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
U-234	U-234	1.000E+00	1.194E-03	1.192E-03	1.094E-03	1.002E-03	4.972E-04	2.071E-04
U-234	Th-230	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
U-234	Ra-226+D	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.902E-04	1.358E-03
U-234	Pb-210+D	1.000E+00	2.240E-13	3.335E-12	7.884E-08	4.529E-07	1.303E-05	3.845E-05
U-234	ΣDSR(j)		1.194E-03	1.192E-03	1.103E-03	1.034E-03	1.016E-03	1.625E-03
U-235+D	U-235+D	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235+D	Pa-231	1.000E+00	4.636E-07	1.390E-06	4.458E-05	8.448E-05	2.895E-04	3.781E-04
U-235+D	Ac-227+D	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
U-235+D	ΣDSR(j)		1.110E-01	1.108E-01	1.020E-01	9.374E-02	4.860E-02	2.239E-02
U-238	U-238	5.400E-05	5.733E-08	5.723E-08	5.253E-08	4.813E-08	2.391E-08	9.971E-09
U-238+D	U-238+D	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.244E-03
U-238+D	U-234	9.999E-01	1.692E-09	5.067E-09	1.566E-07	2.855E-07	7.060E-07	5.881E-07
U-238+D	Th-230	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
U-238+D	Ra-226+D	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
U-238+D	Pb-210+D	9.999E-01	1.271E-19	3.916E-18	2.984E-12	3.534E-11	5.201E-09	2.799E-08
U-238+D	ΣDSR(j)		2.440E-02	2.436E-02	2.236E-02	2.049E-02	1.018E-02	4.246E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t =					
	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	2.151E+00	2.202E+00	6.972E+00	2.260E+01	2.758E+05	3.536E+10
U-234	8.376E+02	8.390E+02	9.065E+02	9.673E+02	9.846E+02	6.154E+02
U-235	9.006E+00	9.021E+00	9.809E+00	1.067E+01	2.058E+01	4.467E+01
U-238	4.098E+01	4.105E+01	4.472E+01	4.881E+01	9.825E+01	2.355E+02

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Cs-137	9.100E+00	0.000E+00	4.650E-01	2.151E+00	4.650E-01	2.151E+00
U-234	3.500E+02	1.000E+03	1.625E-03	6.154E+02	1.194E-03	8.376E+02
U-235	4.100E+01	0.000E+00	1.110E-01	9.006E+00	1.110E-01	9.006E+00

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-FWD.RAD

U-238	1.300E+02	0.000E+00	2.440E-02	4.098E+01	2.440E-02	4.098E+01
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Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-FWD.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	4.231E+00	4.133E+00	1.305E+00	4.026E-01	3.300E-05	2.573E-10
U-234	U-234	1.000E+00	4.179E-01	4.171E-01	3.828E-01	3.507E-01	1.740E-01	7.247E-02
U-234	U-238	9.999E-01	2.199E-07	6.588E-07	2.036E-05	3.712E-05	9.177E-05	7.646E-05
U-234	ΣDOSE (j)		4.179E-01	4.171E-01	3.828E-01	3.507E-01	1.741E-01	7.255E-02
Th-230	U-234	1.000E+00	8.119E-06	2.434E-05	7.844E-04	1.494E-03	5.345E-03	7.448E-03
Th-230	U-238	9.999E-01	2.849E-12	1.992E-11	2.056E-08	7.679E-08	1.211E-06	2.860E-06
Th-230	ΣDOSE (j)		8.119E-06	2.434E-05	7.844E-04	1.494E-03	5.347E-03	7.450E-03
Ra-226	U-234	1.000E+00	3.390E-07	2.371E-06	2.490E-03	9.469E-03	1.716E-01	4.753E-01
Ra-226	U-238	9.999E-01	8.921E-14	1.337E-12	4.362E-08	3.263E-07	2.679E-05	1.316E-04
Ra-226	ΣDOSE (j)		3.390E-07	2.371E-06	2.490E-03	9.469E-03	1.716E-01	4.755E-01
Pb-210	U-234	1.000E+00	7.839E-11	1.167E-09	2.759E-05	1.585E-04	4.561E-03	1.346E-02
Pb-210	U-238	9.999E-01	1.652E-17	5.091E-16	3.879E-10	4.594E-09	6.762E-07	3.639E-06
Pb-210	ΣDOSE (j)		7.839E-11	1.167E-09	2.759E-05	1.585E-04	4.562E-03	1.346E-02
U-235	U-235	1.000E+00	4.553E+00	4.545E+00	4.171E+00	3.822E+00	1.899E+00	7.918E-01
Pa-231	U-235	1.000E+00	1.901E-05	5.697E-05	1.828E-03	3.464E-03	1.187E-02	1.550E-02
Ac-227	U-235	1.000E+00	1.449E-06	1.005E-05	6.713E-03	1.781E-02	8.209E-02	1.106E-01
U-238	U-238	5.400E-05	7.452E-06	7.439E-06	6.828E-06	6.257E-06	3.108E-06	1.296E-06
U-238	U-238	9.999E-01	3.172E+00	3.167E+00	2.907E+00	2.663E+00	1.323E+00	5.518E-01
U-238	ΣDOSE (j)		3.172E+00	3.167E+00	2.907E+00	2.663E+00	1.323E+00	5.518E-01

THF(i) is the thread fraction of the parent nuclide.

Summary : Wildlife Area Wildlife Worker Deterministic Run

File : G:\WILDLIFE\RESRAD RUNS\W\WORKER DET-D2-FWD.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	9.100E+00	8.888E+00	2.807E+00	8.658E-01	7.097E-05	5.534E-10
U-234	U-234	1.000E+00	3.500E+02	3.494E+02	3.206E+02	2.938E+02	1.458E+02	6.070E+01
U-234	U-238	9.999E-01	0.000E+00	3.679E-04	1.688E-02	3.093E-02	7.679E-02	6.401E-02
U-234	ΣS(j):		3.500E+02	3.494E+02	3.207E+02	2.938E+02	1.458E+02	6.077E+01
Th-230	U-234	1.000E+00	0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Th-230	U-238	9.999E-01	0.000E+00	1.657E-09	3.910E-06	1.475E-05	2.345E-04	5.542E-04
Th-230	ΣS(j):		0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Ra-226	U-234	1.000E+00	0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.186E-01
Ra-226	U-238	9.999E-01	0.000E+00	2.393E-13	2.841E-08	2.157E-07	1.792E-05	8.818E-05
Ra-226	ΣS(j):		0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.187E-01
Pb-210	U-234	1.000E+00	0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.012E-01
Pb-210	U-238	9.999E-01	0.000E+00	1.848E-15	8.373E-09	1.011E-07	1.510E-05	8.142E-05
Pb-210	ΣS(j):		0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.013E-01
U-235	U-235	1.000E+00	4.100E+01	4.093E+01	3.757E+01	3.442E+01	1.710E+01	7.131E+00
Pa-231	U-235	1.000E+00	0.000E+00	8.666E-04	4.129E-02	7.863E-02	2.705E-01	3.535E-01
Ac-227	U-235	1.000E+00	0.000E+00	1.365E-05	2.082E-02	5.574E-02	2.584E-01	3.482E-01
U-238	U-238	5.400E-05	7.020E-03	7.008E-03	6.432E-03	5.894E-03	2.928E-03	1.221E-03
U-238	U-238	9.999E-01	1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.421E+01	2.261E+01
U-238	ΣS(j):		1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.422E+01	2.261E+01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 0.93 seconds

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Appendix C: RESRAD Uncertainty Report

APPENDIX C: RESRAD UNCERTAINTY REPORT

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Resident Farmer

*The following report includes
the uncertainty analysis results.*

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Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters	
1	AREA	UNIFORM	10000	40000
2	THICK0	UNIFORM	.03	.75

Probabilistic Total Dose Summary

Nuclide (j)	Peak Time	Peak Dose	DOSE(j,t), mrem/yr					
			t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137								
Min	0.00E+00	1.08E+01	1.08E+01	1.06E+01	3.10E+00	8.89E-01	4.05E-05	1.51E-10
Max	0.00E+00	3.09E+01	3.09E+01	3.02E+01	9.70E+00	3.04E+00	2.85E-04	2.62E-09
Avg	0.00E+00	2.69E+01	2.69E+01	2.63E+01	8.37E+00	2.61E+00	2.31E-04	2.01E-09
Std	0.00E+00	4.19E+00	4.19E+00	4.10E+00	1.38E+00	4.53E-01	5.44E-05	5.95E-10
U-234								
Min	0.00E+00	4.09E+00	4.09E+00	4.06E+00	2.84E+00	1.98E+00	3.17E-01	3.41E-01
Max	1.00E+03	3.97E+01	3.93E+01	3.93E+01	3.86E+01	3.81E+01	3.64E+01	3.97E+01
Avg	8.00E+01	2.80E+01	2.80E+01	2.79E+01	2.69E+01	2.59E+01	2.15E+01	2.15E+01
Std	2.71E+02	8.09E+00	8.06E+00	8.07E+00	8.41E+00	8.69E+00	9.96E+00	1.15E+01
U-235								
Min	0.00E+00	1.29E+01	1.29E+01	1.28E+01	8.76E+00	5.95E+00	3.62E-01	7.58E-02
Max	0.00E+00	2.73E+01	2.73E+01	2.73E+01	2.71E+01	2.69E+01	2.60E+01	2.49E+01
Avg	0.00E+00	2.53E+01	2.53E+01	2.52E+01	2.42E+01	2.33E+01	1.84E+01	1.50E+01
Std	0.00E+00	2.65E+00	2.65E+00	2.67E+00	3.56E+00	4.28E+00	6.83E+00	7.47E+00
U-238								
Min	0.00E+00	9.92E+00	9.92E+00	9.84E+00	6.86E+00	4.67E+00	1.99E-01	3.88E-03
Max	0.00E+00	3.05E+01	3.05E+01	3.05E+01	3.00E+01	2.94E+01	2.56E+01	2.14E+01
Avg	0.00E+00	2.56E+01	2.56E+01	2.56E+01	2.45E+01	2.34E+01	1.71E+01	1.23E+01
Std	0.00E+00	4.39E+00	4.39E+00	4.41E+00	5.05E+00	5.56E+00	6.93E+00	6.57E+00
ΣALL								
Min	0.00E+00	3.80E+01	3.80E+01	3.76E+01	2.20E+01	1.40E+01	8.78E-01	4.21E-01
Max	0.00E+00	1.28E+02	1.28E+02	1.27E+02	1.05E+02	9.73E+01	8.79E+01	8.60E+01
Avg	0.00E+00	1.06E+02	1.06E+02	1.05E+02	8.39E+01	7.52E+01	5.71E+01	4.88E+01
Std	0.00E+00	1.90E+01	1.90E+01	1.90E+01	1.82E+01	1.88E+01	2.36E+01	2.55E+01

ΣALL is total dose summed for all nuclides.

Probabilistic Risk Summary

Nuclide (j)	t=	RISK(j,t)					
		0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137							
Min		2.09E-04	2.03E-04	5.98E-05	1.71E-05	7.80E-10	2.92E-15
Max		5.94E-04	5.80E-04	1.86E-04	5.84E-05	5.47E-09	5.04E-14
Avg		5.17E-04	5.05E-04	1.61E-04	5.01E-05	4.45E-09	3.86E-14
Std		8.01E-05	7.84E-05	2.64E-05	8.67E-06	1.04E-09	1.14E-14
U-234							
Min		5.23E-05	5.20E-05	3.63E-05	2.54E-05	4.95E-06	5.85E-06
Max		4.98E-04	4.98E-04	4.90E-04	4.83E-04	4.66E-04	5.22E-04
Avg		3.55E-04	3.55E-04	3.41E-04	3.28E-04	2.78E-04	2.89E-04
Std		1.02E-04	1.02E-04	1.06E-04	1.10E-04	1.27E-04	1.49E-04
U-235							
Min		2.41E-04	2.39E-04	1.63E-04	1.10E-04	5.89E-06	8.75E-07
Max		4.89E-04	4.89E-04	4.82E-04	4.75E-04	4.26E-04	3.74E-04
Avg		4.58E-04	4.58E-04	4.36E-04	4.17E-04	3.11E-04	2.33E-04
Std		4.53E-05	4.56E-05	6.12E-05	7.37E-05	1.12E-04	1.14E-04
U-238							
Min		1.72E-04	1.71E-04	1.19E-04	8.07E-05	3.43E-06	6.70E-08
Max		5.14E-04	5.14E-04	5.05E-04	4.96E-04	4.31E-04	3.61E-04
Avg		4.35E-04	4.34E-04	4.15E-04	3.96E-04	2.89E-04	2.08E-04
Std		7.28E-05	7.30E-05	8.42E-05	9.29E-05	1.17E-04	1.11E-04
ΣALL							
Min		6.80E-04	6.71E-04	3.86E-04	2.41E-04	1.43E-05	6.79E-06
Max		2.09E-03	2.08E-03	1.66E-03	1.51E-03	1.32E-03	1.26E-03
Avg		1.76E-03	1.75E-03	1.35E-03	1.19E-03	8.78E-04	7.30E-04
Std		2.95E-04	2.94E-04	2.74E-04	2.81E-04	3.54E-04	3.74E-04

ΣALL is total risk summed for all nuclides.

Probabilistic Dose vs Pathway(i): Ground External

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	9.84E+00	9.59E+00	2.82E+00	8.08E-01	3.68E-05	1.38E-10
Max	2.30E+01	2.25E+01	7.19E+00	2.25E+00	2.11E-04	1.94E-09
Avg	2.16E+01	2.11E+01	6.71E+00	2.09E+00	1.85E-04	1.60E-09
Std	2.65E+00	2.59E+00	8.89E-01	2.96E-01	3.81E-05	4.31E-10
U-234						
Min	7.04E-02	6.99E-02	5.24E-02	4.88E-02	1.56E-01	2.52E-01
Max	9.84E-02	9.83E-02	1.11E-01	1.51E-01	1.34E+00	4.42E+00
Avg	9.63E-02	9.62E-02	1.05E-01	1.38E-01	1.11E+00	3.43E+00
Std	4.27E-03	4.36E-03	1.05E-02	2.03E-02	2.84E-01	1.09E+00
U-235						
Min	1.23E+01	1.22E+01	8.31E+00	5.62E+00	2.97E-01	4.22E-02
Max	2.30E+01	2.30E+01	2.25E+01	2.22E+01	1.97E+01	1.71E+01
Avg	2.21E+01	2.21E+01	2.10E+01	2.01E+01	1.48E+01	1.09E+01
Std	1.88E+00	1.89E+00	2.66E+00	3.28E+00	5.18E+00	5.25E+00
U-238						
Min	8.23E+00	8.16E+00	5.54E+00	3.74E+00	1.59E-01	3.10E-03
Max	1.62E+01	1.62E+01	1.59E+01	1.56E+01	1.35E+01	1.13E+01
Avg	1.54E+01	1.53E+01	1.46E+01	1.39E+01	1.00E+01	7.10E+00
Std	1.59E+00	1.61E+00	2.12E+00	2.52E+00	3.65E+00	3.54E+00
ΣALL						
Min	3.04E+01	3.00E+01	1.67E+01	1.02E+01	6.11E-01	2.97E-01
Max	6.23E+01	6.18E+01	4.57E+01	4.01E+01	3.45E+01	3.28E+01
Avg	5.91E+01	5.86E+01	4.24E+01	3.62E+01	2.59E+01	2.15E+01
Std	6.10E+00	6.08E+00	5.67E+00	6.11E+00	9.11E+00	9.86E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Inhalation (w/o Radon)

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	1.04E-07	1.02E-07	3.01E-08	8.68E-09	4.10E-13	1.53E-18
Max	5.02E-07	4.91E-07	1.57E-07	4.93E-08	4.61E-12	4.24E-17
Avg	4.43E-07	4.33E-07	1.38E-07	4.30E-08	3.83E-12	3.33E-17
Std	8.60E-08	8.41E-08	2.76E-08	8.87E-09	9.58E-13	9.90E-18
U-234						
Min	9.79E-04	9.72E-04	6.81E-04	4.74E-04	3.16E-05	1.16E-05
Max	4.72E-03	4.71E-03	4.65E-03	4.59E-03	4.12E-03	3.65E-03
Avg	4.17E-03	4.16E-03	4.00E-03	3.84E-03	2.93E-03	2.25E-03
Std	8.09E-04	8.11E-04	8.76E-04	9.29E-04	1.10E-03	1.08E-03
U-235						
Min	1.04E-04	1.03E-04	7.64E-05	5.94E-05	1.85E-05	1.04E-05
Max	5.01E-04	5.00E-04	5.17E-04	5.48E-04	7.93E-04	1.04E-03
Avg	4.42E-04	4.42E-04	4.45E-04	4.60E-04	5.88E-04	7.03E-04
Std	8.58E-05	8.60E-05	9.72E-05	1.10E-04	1.99E-04	2.87E-04
U-238						
Min	3.09E-04	3.07E-04	2.14E-04	1.48E-04	6.29E-06	1.23E-07
Max	1.49E-03	1.49E-03	1.46E-03	1.44E-03	1.24E-03	1.04E-03
Avg	1.32E-03	1.32E-03	1.26E-03	1.20E-03	8.79E-04	6.27E-04
Std	2.56E-04	2.56E-04	2.76E-04	2.91E-04	3.34E-04	3.15E-04
ΣALL						
Min	1.39E-03	1.38E-03	9.71E-04	6.81E-04	5.63E-05	2.21E-05
Max	6.71E-03	6.71E-03	6.63E-03	6.57E-03	6.16E-03	5.74E-03
Avg	5.93E-03	5.92E-03	5.70E-03	5.51E-03	4.40E-03	3.58E-03
Std	1.15E-03	1.15E-03	1.25E-03	1.33E-03	1.63E-03	1.68E-03

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Radon (Water Ind.)

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr					
		0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137							
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
U-234							
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
U-235							
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
U-238							
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
ΣALL							
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Plant (Water Ind.)

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	8.05E-02	7.85E-02	2.31E-02	6.61E-03	3.01E-07	1.13E-12
Max	1.81E+00	1.77E+00	5.68E-01	1.78E-01	1.67E-05	1.54E-10
Avg	9.45E-01	9.23E-01	2.95E-01	9.23E-02	8.40E-06	7.49E-11
Std	5.04E-01	4.92E-01	1.59E-01	4.99E-02	4.81E-06	4.54E-11
U-234						
Min	7.35E-01	7.30E-01	4.96E-01	3.37E-01	3.81E-02	3.95E-02
Max	1.66E+01	1.66E+01	1.63E+01	1.61E+01	1.56E+01	1.77E+01
Avg	8.65E+00	8.64E+00	8.38E+00	8.14E+00	7.20E+00	7.65E+00
Std	4.61E+00	4.61E+00	4.61E+00	4.61E+00	4.74E+00	5.45E+00
U-235						
Min	8.35E-02	8.29E-02	6.15E-02	4.71E-02	1.45E-02	8.22E-03
Max	1.88E+00	1.88E+00	1.99E+00	2.12E+00	3.09E+00	4.08E+00
Avg	9.82E-01	9.82E-01	1.02E+00	1.08E+00	1.45E+00	1.80E+00
Std	5.23E-01	5.24E-01	5.63E-01	6.06E-01	9.28E-01	1.25E+00
U-238						
Min	2.71E-01	2.69E-01	1.83E-01	1.23E-01	5.25E-03	1.06E-04
Max	6.10E+00	6.10E+00	6.00E+00	5.90E+00	5.13E+00	4.31E+00
Avg	3.19E+00	3.19E+00	3.08E+00	2.99E+00	2.35E+00	1.78E+00
Std	1.70E+00	1.70E+00	1.70E+00	1.69E+00	1.57E+00	1.35E+00
ΣALL						
Min	1.17E+00	1.16E+00	7.64E-01	5.13E-01	5.79E-02	4.78E-02
Max	2.64E+01	2.63E+01	2.49E+01	2.43E+01	2.38E+01	2.61E+01
Avg	1.38E+01	1.37E+01	1.28E+01	1.23E+01	1.10E+01	1.12E+01
Std	7.33E+00	7.32E+00	7.03E+00	6.95E+00	7.23E+00	8.06E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Meat (Water Ind.)

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	3.22E-01	3.14E-01	9.28E-02	2.68E-02	1.28E-06	5.09E-12
Max	3.65E+00	3.57E+00	1.14E+00	3.59E-01	3.36E-05	3.10E-10
Avg	2.51E+00	2.45E+00	7.82E-01	2.44E-01	2.19E-05	1.92E-10
Std	7.86E-01	7.68E-01	2.50E-01	7.92E-02	8.01E-06	7.89E-11
U-234						
Min	4.61E-01	4.58E-01	3.19E-01	2.21E-01	1.89E-02	1.27E-02
Max	3.49E+00	3.49E+00	3.43E+00	3.38E+00	3.12E+00	3.14E+00
Avg	2.92E+00	2.92E+00	2.79E+00	2.68E+00	2.09E+00	1.85E+00
Std	7.36E-01	7.36E-01	7.62E-01	7.84E-01	8.67E-01	9.24E-01
U-235						
Min	5.24E-02	5.23E-02	4.66E-02	4.22E-02	2.52E-02	1.57E-02
Max	3.97E-01	3.99E-01	4.95E-01	5.92E-01	1.30E+00	2.02E+00
Avg	3.32E-01	3.34E-01	4.00E-01	4.65E-01	8.95E-01	1.26E+00
Std	8.37E-02	8.42E-02	1.09E-01	1.35E-01	3.37E-01	5.62E-01
U-238						
Min	1.70E-01	1.69E-01	1.18E-01	8.13E-02	4.25E-03	1.04E-04
Max	1.29E+00	1.29E+00	1.26E+00	1.24E+00	1.08E+00	9.06E-01
Avg	1.08E+00	1.08E+00	1.03E+00	9.85E-01	7.21E-01	5.16E-01
Std	2.71E-01	2.71E-01	2.81E-01	2.88E-01	3.03E-01	2.77E-01
ΣALL						
Min	1.01E+00	9.93E-01	5.76E-01	3.72E-01	4.84E-02	2.86E-02
Max	8.82E+00	8.74E+00	6.33E+00	5.57E+00	5.49E+00	6.06E+00
Avg	6.84E+00	6.78E+00	5.01E+00	4.37E+00	3.71E+00	3.63E+00
Std	1.84E+00	1.82E+00	1.39E+00	1.28E+00	1.51E+00	1.76E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Milk (Water Ind.)

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	2.37E-01	2.31E-01	6.83E-02	1.97E-02	9.42E-07	3.75E-12
Max	2.69E+00	2.62E+00	8.42E-01	2.64E-01	2.48E-05	2.28E-10
Avg	1.85E+00	1.80E+00	5.76E-01	1.79E-01	1.61E-05	1.41E-10
Std	5.78E-01	5.65E-01	1.84E-01	5.83E-02	5.90E-06	5.81E-11
U-234						
Min	2.25E+00	2.23E+00	1.55E+00	1.07E+00	6.53E-02	1.74E-02
Max	1.70E+01	1.70E+01	1.67E+01	1.64E+01	1.45E+01	1.28E+01
Avg	1.42E+01	1.42E+01	1.36E+01	1.30E+01	9.68E+00	7.38E+00
Std	3.58E+00	3.59E+00	3.71E+00	3.81E+00	4.05E+00	3.88E+00
U-235						
Min	2.55E-01	2.53E-01	1.76E-01	1.22E-01	6.85E-03	4.84E-04
Max	1.93E+00	1.93E+00	1.89E+00	1.86E+00	1.63E+00	1.39E+00
Avg	1.61E+00	1.61E+00	1.54E+00	1.48E+00	1.09E+00	7.92E-01
Std	4.06E-01	4.07E-01	4.21E-01	4.33E-01	4.58E-01	4.23E-01
U-238						
Min	8.28E-01	8.21E-01	5.72E-01	3.96E-01	2.07E-02	5.00E-04
Max	6.26E+00	6.26E+00	6.15E+00	6.05E+00	5.26E+00	4.41E+00
Avg	5.24E+00	5.24E+00	5.01E+00	4.80E+00	3.51E+00	2.51E+00
Std	1.32E+00	1.32E+00	1.37E+00	1.40E+00	1.48E+00	1.35E+00
ΣALL						
Min	3.56E+00	3.53E+00	2.37E+00	1.61E+00	9.29E-02	1.84E-02
Max	2.79E+01	2.78E+01	2.56E+01	2.46E+01	2.14E+01	1.86E+01
Avg	2.29E+01	2.29E+01	2.07E+01	1.95E+01	1.43E+01	1.07E+01
Std	5.84E+00	5.84E+00	5.67E+00	5.70E+00	5.99E+00	5.65E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Soil Ingestion

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	3.36E-03	3.27E-03	9.62E-04	2.76E-04	1.26E-08	4.70E-14
Max	1.52E-02	1.48E-02	4.76E-03	1.49E-03	1.40E-07	1.29E-12
Avg	1.41E-02	1.38E-02	4.41E-03	1.37E-03	1.22E-07	1.06E-12
Std	2.68E-03	2.62E-03	8.62E-04	2.77E-04	3.01E-08	3.12E-13
U-234						
Min	4.90E-01	4.86E-01	3.31E-01	2.24E-01	1.43E-02	6.71E-03
Max	2.22E+00	2.22E+00	2.18E+00	2.15E+00	1.94E+00	1.77E+00
Avg	2.07E+00	2.07E+00	1.98E+00	1.90E+00	1.44E+00	1.14E+00
Std	3.92E-01	3.93E-01	4.26E-01	4.52E-01	5.37E-01	5.41E-01
U-235						
Min	5.56E-02	5.52E-02	3.88E-02	2.79E-02	5.14E-03	2.60E-03
Max	2.52E-01	2.52E-01	2.55E-01	2.60E-01	3.05E-01	3.50E-01
Avg	2.35E-01	2.35E-01	2.31E-01	2.30E-01	2.33E-01	2.39E-01
Std	4.45E-02	4.46E-02	4.96E-02	5.44E-02	8.15E-02	1.02E-01
U-238						
Min	1.81E-01	1.79E-01	1.22E-01	8.20E-02	3.49E-03	6.84E-05
Max	8.18E-01	8.18E-01	8.04E-01	7.90E-01	6.87E-01	5.77E-01
Avg	7.63E-01	7.62E-01	7.29E-01	6.97E-01	5.09E-01	3.63E-01
Std	1.45E-01	1.45E-01	1.57E-01	1.66E-01	1.92E-01	1.81E-01
ΣALL						
Min	7.30E-01	7.24E-01	4.92E-01	3.34E-01	2.29E-02	9.38E-03
Max	3.30E+00	3.30E+00	3.25E+00	3.20E+00	2.93E+00	2.70E+00
Avg	3.08E+00	3.08E+00	2.95E+00	2.83E+00	2.18E+00	1.74E+00
Std	5.84E-01	5.85E-01	6.33E-01	6.73E-01	8.11E-01	8.25E-01

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Water Ingestion

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-234						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-235						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-238						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Fish Ingestion

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-234						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-235						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-238						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Radon (Water Dep.)

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-234						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-235						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-238						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Plant (Water Dep.)

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-234						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-235						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-238						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Meat (Water Dep.)

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-234						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-235						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-238						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic Dose vs Pathway(i): Milk (Water Dep.)

Nuclide (j)	DOSE(i,j,t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
Cs-137						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-234						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-235						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
U-238						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL						
Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : Wildlife Area Resident Farmer Deterministic Run

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Cumulative Probability Summary for: Total Dose Over Pathways

Cumulative Probability	Dose (t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
0.025	5.05E+01	5.00E+01	3.20E+01	2.25E+01	2.94E+00	1.03E+00
0.050	5.87E+01	5.82E+01	3.93E+01	2.93E+01	6.11E+00	2.07E+00
0.075	7.03E+01	6.96E+01	4.96E+01	3.92E+01	1.15E+01	4.33E+00
0.100	7.80E+01	7.74E+01	5.66E+01	4.60E+01	1.64E+01	6.99E+00
0.125	8.40E+01	8.34E+01	6.20E+01	5.23E+01	2.34E+01	1.14E+01
0.150	8.84E+01	8.78E+01	6.63E+01	5.64E+01	2.77E+01	1.41E+01
0.175	9.29E+01	9.22E+01	7.23E+01	6.31E+01	3.33E+01	1.84E+01
0.200	9.63E+01	9.56E+01	7.42E+01	6.49E+01	3.73E+01	2.18E+01
0.225	9.95E+01	9.88E+01	7.66E+01	6.69E+01	4.03E+01	2.58E+01
0.250	1.01E+02	1.00E+02	7.88E+01	6.88E+01	4.36E+01	2.92E+01
0.275	1.02E+02	1.02E+02	8.05E+01	7.06E+01	4.62E+01	3.17E+01
0.300	1.03E+02	1.03E+02	8.16E+01	7.22E+01	4.84E+01	3.42E+01
0.325	1.04E+02	1.04E+02	8.24E+01	7.36E+01	5.10E+01	3.79E+01
0.350	1.06E+02	1.05E+02	8.33E+01	7.43E+01	5.32E+01	4.01E+01
0.375	1.07E+02	1.06E+02	8.44E+01	7.52E+01	5.51E+01	4.25E+01
0.400	1.07E+02	1.06E+02	8.52E+01	7.63E+01	5.70E+01	4.52E+01
0.425	1.08E+02	1.07E+02	8.60E+01	7.71E+01	5.86E+01	4.71E+01
0.450	1.09E+02	1.08E+02	8.66E+01	7.83E+01	5.99E+01	4.92E+01
0.475	1.10E+02	1.09E+02	8.77E+01	7.88E+01	6.18E+01	5.17E+01
0.500	1.11E+02	1.10E+02	8.85E+01	8.00E+01	6.36E+01	5.44E+01
0.525	1.11E+02	1.11E+02	8.93E+01	8.08E+01	6.48E+01	5.60E+01
0.550	1.12E+02	1.11E+02	9.05E+01	8.22E+01	6.59E+01	5.72E+01
0.575	1.13E+02	1.12E+02	9.10E+01	8.31E+01	6.71E+01	5.93E+01
0.600	1.14E+02	1.13E+02	9.17E+01	8.35E+01	6.84E+01	6.04E+01
0.625	1.14E+02	1.14E+02	9.23E+01	8.40E+01	7.00E+01	6.23E+01
0.650	1.15E+02	1.14E+02	9.33E+01	8.50E+01	7.10E+01	6.37E+01
0.675	1.16E+02	1.15E+02	9.39E+01	8.57E+01	7.16E+01	6.53E+01
0.700	1.17E+02	1.16E+02	9.46E+01	8.64E+01	7.33E+01	6.69E+01
0.725	1.17E+02	1.17E+02	9.53E+01	8.73E+01	7.48E+01	6.89E+01
0.750	1.19E+02	1.18E+02	9.65E+01	8.87E+01	7.58E+01	7.11E+01
0.775	1.19E+02	1.19E+02	9.73E+01	8.92E+01	7.75E+01	7.29E+01
0.800	1.20E+02	1.20E+02	9.83E+01	9.03E+01	7.83E+01	7.38E+01
0.825	1.21E+02	1.21E+02	9.91E+01	9.12E+01	7.93E+01	7.50E+01
0.850	1.22E+02	1.21E+02	9.97E+01	9.16E+01	8.02E+01	7.61E+01
0.875	1.23E+02	1.23E+02	1.01E+02	9.31E+01	8.17E+01	7.77E+01
0.900	1.24E+02	1.23E+02	1.02E+02	9.37E+01	8.29E+01	7.92E+01
0.925	1.25E+02	1.24E+02	1.03E+02	9.48E+01	8.43E+01	8.16E+01
0.950	1.26E+02	1.25E+02	1.03E+02	9.55E+01	8.53E+01	8.26E+01
0.975	1.27E+02	1.26E+02	1.05E+02	9.68E+01	8.71E+01	8.50E+01
1.000	1.28E+02	1.27E+02	1.05E+02	9.73E+01	8.79E+01	8.60E+01

Probabilistic results summary : Wildlife Area Resident Farmer Deterministic Run

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Summary of dose at graphical times, reptition 1

Time Years	Dose statistics at graphical times, mrem/yr							
	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	4.13E+01	1.28E+02	1.06E+02	1.11E+02	1.24E+02	1.26E+02	1.27E+02	1.28E+02
1.00E+00	4.08E+01	1.27E+02	1.05E+02	1.11E+02	1.24E+02	1.26E+02	1.27E+02	1.27E+02
1.28E+00	4.06E+01	1.27E+02	1.05E+02	1.10E+02	1.23E+02	1.25E+02	1.26E+02	1.27E+02
1.64E+00	4.04E+01	1.27E+02	1.05E+02	1.10E+02	1.23E+02	1.25E+02	1.26E+02	1.27E+02
2.10E+00	4.02E+01	1.26E+02	1.04E+02	1.10E+02	1.23E+02	1.25E+02	1.26E+02	1.26E+02
2.68E+00	3.99E+01	1.26E+02	1.04E+02	1.09E+02	1.22E+02	1.24E+02	1.25E+02	1.26E+02
3.43E+00	3.96E+01	1.25E+02	1.04E+02	1.09E+02	1.22E+02	1.24E+02	1.25E+02	1.25E+02
4.39E+00	3.91E+01	1.25E+02	1.03E+02	1.08E+02	1.21E+02	1.23E+02	1.24E+02	1.25E+02
5.62E+00	3.86E+01	1.24E+02	1.02E+02	1.07E+02	1.20E+02	1.22E+02	1.23E+02	1.24E+02
7.20E+00	3.79E+01	1.23E+02	1.01E+02	1.06E+02	1.19E+02	1.21E+02	1.22E+02	1.23E+02
9.21E+00	3.70E+01	1.22E+02	1.00E+02	1.05E+02	1.18E+02	1.20E+02	1.21E+02	1.22E+02
1.18E+01	3.59E+01	1.20E+02	9.86E+01	1.04E+02	1.17E+02	1.19E+02	1.20E+02	1.20E+02
1.51E+01	3.46E+01	1.18E+02	9.68E+01	1.02E+02	1.15E+02	1.17E+02	1.18E+02	1.18E+02
1.93E+01	3.30E+01	1.16E+02	9.48E+01	1.00E+02	1.13E+02	1.15E+02	1.16E+02	1.16E+02
2.47E+01	3.11E+01	1.14E+02	9.24E+01	9.77E+01	1.10E+02	1.12E+02	1.13E+02	1.14E+02
3.16E+01	2.89E+01	1.11E+02	8.97E+01	9.49E+01	1.07E+02	1.09E+02	1.10E+02	1.11E+02
4.05E+01	2.64E+01	1.08E+02	8.67E+01	9.19E+01	1.05E+02	1.06E+02	1.07E+02	1.08E+02
5.00E+01	2.40E+01	1.05E+02	8.40E+01	8.91E+01	1.02E+02	1.04E+02	1.05E+02	1.05E+02
6.18E+01	2.36E+01	1.05E+02	8.35E+01	8.87E+01	1.01E+02	1.03E+02	1.04E+02	1.05E+02
7.63E+01	2.06E+01	1.02E+02	8.04E+01	8.57E+01	9.84E+01	1.00E+02	1.01E+02	1.02E+02
9.48E+01	1.74E+01	9.89E+01	7.72E+01	8.26E+01	9.56E+01	9.75E+01	9.86E+01	9.89E+01
1.00E+02	1.53E+01	9.73E+01	7.53E+01	8.06E+01	9.39E+01	9.59E+01	9.70E+01	9.73E+01
1.09E+02	1.43E+01	9.65E+01	7.43E+01	7.97E+01	9.31E+01	9.51E+01	9.62E+01	9.65E+01
1.39E+02	1.12E+01	9.46E+01	7.16E+01	7.70E+01	9.11E+01	9.32E+01	9.43E+01	9.46E+01
1.78E+02	8.33E+00	9.30E+01	6.91E+01	7.49E+01	8.94E+01	9.16E+01	9.27E+01	9.30E+01
2.28E+02	5.80E+00	9.17E+01	6.65E+01	7.24E+01	8.79E+01	9.02E+01	9.14E+01	9.17E+01
2.91E+02	3.72E+00	9.05E+01	6.38E+01	6.98E+01	8.65E+01	8.88E+01	9.01E+01	9.05E+01
3.73E+02	2.19E+00	8.92E+01	6.09E+01	6.71E+01	8.49E+01	8.75E+01	8.88E+01	8.92E+01
4.77E+02	1.22E+00	8.79E+01	5.78E+01	6.42E+01	8.32E+01	8.60E+01	8.75E+01	8.79E+01
5.00E+02	1.09E+00	8.77E+01	5.72E+01	6.36E+01	8.29E+01	8.58E+01	8.72E+01	8.77E+01
6.11E+02	7.17E-01	8.67E+01	5.46E+01	6.08E+01	8.16E+01	8.47E+01	8.63E+01	8.67E+01
7.81E+02	5.26E-01	8.58E+01	5.15E+01	5.77E+01	8.02E+01	8.36E+01	8.54E+01	8.58E+01
1.00E+03	4.86E-01	8.57E+01	4.89E+01	5.43E+01	7.93E+01	8.32E+01	8.53E+01	8.57E+01

Probabilistic results summary : Wildlife Area Resident Farmer Deterministic Run

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Summary of dose at graphical times, reptition 2

Time Years	Dose statistics at graphical times, mrem/yr							
	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	3.97E+01	1.28E+02	1.06E+02	1.11E+02	1.24E+02	1.26E+02	1.27E+02	1.28E+02
1.00E+00	3.92E+01	1.27E+02	1.05E+02	1.10E+02	1.23E+02	1.25E+02	1.26E+02	1.27E+02
1.28E+00	3.90E+01	1.27E+02	1.05E+02	1.10E+02	1.23E+02	1.25E+02	1.26E+02	1.27E+02
1.64E+00	3.89E+01	1.27E+02	1.04E+02	1.10E+02	1.23E+02	1.25E+02	1.26E+02	1.27E+02
2.10E+00	3.86E+01	1.26E+02	1.04E+02	1.09E+02	1.23E+02	1.24E+02	1.26E+02	1.26E+02
2.68E+00	3.84E+01	1.26E+02	1.04E+02	1.09E+02	1.22E+02	1.24E+02	1.25E+02	1.26E+02
3.43E+00	3.80E+01	1.25E+02	1.03E+02	1.08E+02	1.22E+02	1.23E+02	1.25E+02	1.25E+02
4.39E+00	3.76E+01	1.25E+02	1.03E+02	1.08E+02	1.21E+02	1.23E+02	1.24E+02	1.25E+02
5.62E+00	3.70E+01	1.24E+02	1.02E+02	1.07E+02	1.20E+02	1.22E+02	1.23E+02	1.24E+02
7.20E+00	3.63E+01	1.23E+02	1.01E+02	1.06E+02	1.19E+02	1.21E+02	1.22E+02	1.23E+02
9.21E+00	3.54E+01	1.22E+02	9.97E+01	1.05E+02	1.18E+02	1.20E+02	1.21E+02	1.22E+02
1.18E+01	3.44E+01	1.20E+02	9.83E+01	1.03E+02	1.17E+02	1.18E+02	1.19E+02	1.20E+02
1.51E+01	3.30E+01	1.18E+02	9.65E+01	1.01E+02	1.15E+02	1.16E+02	1.18E+02	1.18E+02
1.93E+01	3.15E+01	1.16E+02	9.45E+01	9.92E+01	1.13E+02	1.14E+02	1.16E+02	1.16E+02
2.47E+01	2.96E+01	1.14E+02	9.21E+01	9.67E+01	1.10E+02	1.12E+02	1.13E+02	1.14E+02
3.16E+01	2.74E+01	1.11E+02	8.94E+01	9.39E+01	1.07E+02	1.09E+02	1.10E+02	1.11E+02
4.05E+01	2.49E+01	1.08E+02	8.64E+01	9.08E+01	1.04E+02	1.06E+02	1.07E+02	1.08E+02
5.00E+01	2.26E+01	1.05E+02	8.37E+01	8.81E+01	1.02E+02	1.03E+02	1.05E+02	1.05E+02
5.18E+01	2.22E+01	1.05E+02	8.33E+01	8.76E+01	1.01E+02	1.03E+02	1.04E+02	1.05E+02
6.63E+01	1.92E+01	1.02E+02	8.01E+01	8.43E+01	9.83E+01	9.99E+01	1.01E+02	1.02E+02
8.48E+01	1.61E+01	9.90E+01	7.70E+01	8.11E+01	9.55E+01	9.72E+01	9.84E+01	9.90E+01
1.00E+02	1.41E+01	9.73E+01	7.50E+01	7.91E+01	9.39E+01	9.55E+01	9.67E+01	9.73E+01
1.09E+02	1.31E+01	9.66E+01	7.41E+01	7.81E+01	9.31E+01	9.48E+01	9.60E+01	9.66E+01
1.39E+02	1.01E+01	9.47E+01	7.14E+01	7.57E+01	9.11E+01	9.28E+01	9.40E+01	9.47E+01
1.78E+02	7.38E+00	9.31E+01	6.88E+01	7.35E+01	8.96E+01	9.12E+01	9.24E+01	9.31E+01
2.28E+02	5.02E+00	9.18E+01	6.63E+01	7.13E+01	8.82E+01	8.98E+01	9.10E+01	9.18E+01
2.91E+02	3.14E+00	9.06E+01	6.36E+01	6.96E+01	8.67E+01	8.84E+01	8.98E+01	9.06E+01
3.73E+02	1.80E+00	8.94E+01	6.07E+01	6.74E+01	8.52E+01	8.70E+01	8.84E+01	8.93E+01
4.77E+02	9.81E-01	8.81E+01	5.76E+01	6.44E+01	8.36E+01	8.56E+01	8.71E+01	8.81E+01
5.00E+02	8.78E-01	8.79E+01	5.70E+01	6.40E+01	8.33E+01	8.53E+01	8.68E+01	8.79E+01
6.11E+02	5.84E-01	8.69E+01	5.44E+01	6.14E+01	8.20E+01	8.42E+01	8.58E+01	8.69E+01
7.81E+02	4.45E-01	8.61E+01	5.14E+01	5.80E+01	8.09E+01	8.31E+01	8.48E+01	8.61E+01
1.00E+03	4.21E-01	8.60E+01	4.87E+01	5.51E+01	8.08E+01	8.26E+01	8.45E+01	8.60E+01

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Summary of dose at graphical times, reptition 3

Time Years	Dose statistics at graphical times, mrem/yr							
	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	3.80E+01	1.28E+02	1.06E+02	1.10E+02	1.23E+02	1.27E+02	1.27E+02	1.28E+02
1.00E+00	3.76E+01	1.27E+02	1.05E+02	1.09E+02	1.23E+02	1.26E+02	1.27E+02	1.27E+02
1.28E+00	3.74E+01	1.27E+02	1.05E+02	1.09E+02	1.22E+02	1.26E+02	1.26E+02	1.27E+02
1.64E+00	3.73E+01	1.26E+02	1.05E+02	1.08E+02	1.22E+02	1.25E+02	1.26E+02	1.26E+02
2.10E+00	3.71E+01	1.26E+02	1.04E+02	1.08E+02	1.22E+02	1.25E+02	1.26E+02	1.26E+02
2.68E+00	3.68E+01	1.26E+02	1.04E+02	1.08E+02	1.22E+02	1.25E+02	1.25E+02	1.26E+02
3.43E+00	3.65E+01	1.25E+02	1.03E+02	1.07E+02	1.21E+02	1.24E+02	1.25E+02	1.25E+02
4.39E+00	3.60E+01	1.25E+02	1.03E+02	1.07E+02	1.20E+02	1.23E+02	1.24E+02	1.25E+02
5.62E+00	3.55E+01	1.24E+02	1.02E+02	1.06E+02	1.20E+02	1.23E+02	1.23E+02	1.24E+02
7.20E+00	3.48E+01	1.23E+02	1.01E+02	1.05E+02	1.19E+02	1.22E+02	1.22E+02	1.23E+02
9.21E+00	3.40E+01	1.21E+02	9.99E+01	1.04E+02	1.17E+02	1.20E+02	1.21E+02	1.21E+02
1.18E+01	3.30E+01	1.20E+02	9.85E+01	1.02E+02	1.16E+02	1.19E+02	1.20E+02	1.20E+02
1.51E+01	3.18E+01	1.18E+02	9.68E+01	1.00E+02	1.14E+02	1.17E+02	1.18E+02	1.18E+02
1.93E+01	3.03E+01	1.16E+02	9.47E+01	9.84E+01	1.12E+02	1.15E+02	1.16E+02	1.16E+02
2.47E+01	2.85E+01	1.13E+02	9.23E+01	9.60E+01	1.09E+02	1.12E+02	1.13E+02	1.13E+02
3.16E+01	2.65E+01	1.11E+02	8.96E+01	9.33E+01	1.07E+02	1.10E+02	1.10E+02	1.11E+02
4.05E+01	2.42E+01	1.08E+02	8.66E+01	9.04E+01	1.04E+02	1.07E+02	1.07E+02	1.08E+02
5.00E+01	2.20E+01	1.05E+02	8.39E+01	8.80E+01	1.01E+02	1.04E+02	1.05E+02	1.05E+02
6.18E+01	2.16E+01	1.05E+02	8.35E+01	8.75E+01	1.01E+02	1.04E+02	1.04E+02	1.05E+02
7.63E+01	1.88E+01	1.02E+02	8.03E+01	8.45E+01	9.75E+01	1.01E+02	1.01E+02	1.02E+02
9.48E+01	1.59E+01	9.88E+01	7.72E+01	8.16E+01	9.47E+01	9.77E+01	9.86E+01	9.88E+01
1.00E+02	1.40E+01	9.71E+01	7.52E+01	7.97E+01	9.30E+01	9.61E+01	9.69E+01	9.71E+01
1.09E+02	1.30E+01	9.64E+01	7.42E+01	7.88E+01	9.22E+01	9.53E+01	9.62E+01	9.64E+01
1.39E+02	1.02E+01	9.44E+01	7.15E+01	7.60E+01	9.02E+01	9.33E+01	9.42E+01	9.44E+01
1.78E+02	7.61E+00	9.29E+01	6.90E+01	7.37E+01	8.85E+01	9.17E+01	9.26E+01	9.29E+01
2.28E+02	5.30E+00	9.16E+01	6.64E+01	7.12E+01	8.69E+01	9.04E+01	9.13E+01	9.16E+01
2.91E+02	3.41E+00	9.03E+01	6.37E+01	6.83E+01	8.54E+01	8.90E+01	9.00E+01	9.03E+01
3.73E+02	2.02E+00	8.91E+01	6.08E+01	6.50E+01	8.37E+01	8.77E+01	8.87E+01	8.91E+01
4.77E+02	1.13E+00	8.78E+01	5.76E+01	6.22E+01	8.20E+01	8.62E+01	8.74E+01	8.78E+01
5.00E+02	1.01E+00	8.75E+01	5.70E+01	6.17E+01	8.16E+01	8.60E+01	8.71E+01	8.75E+01
6.11E+02	6.67E-01	8.66E+01	5.44E+01	5.95E+01	8.02E+01	8.49E+01	8.61E+01	8.66E+01
7.81E+02	4.93E-01	8.57E+01	5.13E+01	5.66E+01	7.85E+01	8.38E+01	8.52E+01	8.57E+01
1.00E+03	4.58E-01	8.56E+01	4.87E+01	5.34E+01	7.75E+01	8.34E+01	8.49E+01	8.56E+01

Probabilistic results summary : Wildlife Area Resident Farmer Deterministic Run

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Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose	Peak mean dose
	Years	mrem/yr
1	0.000E+00	1.059E+02
2	0.000E+00	1.056E+02
3	0.000E+00	1.058E+02

Title : Wildlife Area Resident Farmer Deterministic Run

Input File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-PROB.RAD

Coefficients for peak All Pathways Dose

Coefficient =	PCC	SRC	PRCC	SRRC
Repetition =	1	1	1	1

Description of Probabilistic Variable

Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Area of contaminated zone	2	0.45	2	0.25	2	0.67	2	0.27
Thickness of contaminated zone	1	0.86	1	0.83	1	0.95	1	0.91
R-SQUARE		0.75		0.75		0.91		0.91

-Rank is set to zero if the dose is zero or the correlation matrix is singular.

-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

Title : Wildlife Area Resident Farmer Deterministic Run

Input File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-PROB.RAD

Coefficients for peak All Pathways Dose

Coefficient =	PCC	SRC	PRCC	SRRC
Repetition =	2	2	2	2

Description of Probabilistic Variable

Sig Coeff Sig Coeff Sig Coeff Sig Coeff

Area of contaminated zone

2 0.27 2 0.15 2 0.68 2 0.29

Thickness of contaminated zone

1 0.85 1 0.84 1 0.95 1 0.90

R-SQUARE

0.72 0.72 0.90 0.90

-Rank is set to zero if the dose is zero or the correlation matrix is singular.

-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

Title : Wildlife Area Resident Farmer Deterministic Run

Input File : X:\WILDLIFE AREAS\D2\RF\RF DET-D2-PROB.RAD

Coefficients for peak All Pathways Dose

Coefficient =	PCC	SRC	PRCC	SRRC
Repetition =	3	3	3	3

Description of Probabilistic Variable

Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Area of contaminated zone	2	0.38	2	0.22	2	0.72	2	0.33
Thickness of contaminated zone	1	0.83	1	0.81	1	0.94	1	0.88
R-SQUARE		0.71		0.71		0.90		0.90

-Rank is set to zero if the dose is zero or the correlation matrix is singular.

-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

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Appendix D: Additional Documentation

APPENDIX D: ADDITIONAL DOCUMENTATION

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*Comparison of Environmental Soil and
Sediment Data with DOE-PPPO
Proposed Authorized Limits (Final)*

By

D. G. Maldonado
and
J. Viars

Independent Environmental Assessment
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*Comparison of Environmental Soil and Sediment Data with
DOE-PPPO Proposed Authorized Limits*

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FINAL

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Terms, Acronyms, and Abbreviations

AL	Authorized Limit(s)
Am-241	americium-241
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
Cs-137	cesium-137
DCGL	derived concentration guideline level
DOE	U.S. Department of Energy
DOE-PPPO	DOE Portsmouth/Paducah Project Office
ELCR	excess lifetime cancer risk
ESRI	Environmental Systems Research Institute, Inc.
GIS	geographic information system
LATA KY	LATA Environmental Services of Kentucky, LLC
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
Np-237	neptunium-237
NSDD	North-South Diversion Ditch
ORISE	Oak Ridge Institute for Science and Education
pCi/g	picocuries per gram
PGDP	Paducah Gaseous Diffusion Plant
Pu-238	plutonium-238
Pu-239	plutonium-239
Pu-240	plutonium-240
SWMU	Solid Waste Management Unit
SWOU	Surface Water Operable Unit
Tc-99	technetium-99
TCE	trichloroethene
Th-228	thorium-228
Th-230	thorium-230
Th-232	thorium-232
TVA	Tennessee Valley Authority
U-234	uranium-234
U-235	uranium-235
U-238	uranium-238
WKWMA	West Kentucky Wildlife Management Area

ABSTRACT

The Oak Ridge Institute for Science and Education (ORISE), a U.S. Department of Energy (DOE) prime contractor, was contracted by the DOE Portsmouth/Paducah Project Office (DOE-PPPO) to conduct a comparison of environmental soil and sediment data with DOE-PPPO proposed Authorized Limits (ALs) in support of the *Authorized Limits Request for DOE-Owned Property Outside the Limited Area at the Paducah Gaseous Diffusion Plant* (DOE-PPPO 2012). The purpose for completing this analysis is two-fold: (1) to determine where ALs are likely to be exceeded, and (2) to determine where ALs are unlikely to be exceeded. The environmental soil and sediment data for 13 radionuclides were compared with the DOE-PPPO proposed ALs. DOE-PPPO proposed two sets of ALs: one set with deed restrictions and one without deed restrictions. These ALs were provided to ORISE by DOE-PPPO and are available in DOE-PPPO 2012. This work is provided as an appendix to the *Dose Modeling Evaluations and Technical Support Document for the Authorized Limits Request for the DOE-Owned Property Outside the Limited Area at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (ORISE 2012).

Pre-remediation environmental soil and sediment sample data for 13 radionuclides (i.e., Am-241, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, and U-238) were evaluated for areas outside the limited area and inside the boundary represented by Woodville Road, Metropolis Lake Road, and Bethel Church Road north to the Ohio River. The pre-remediation environmental soil and sediment data for these areas were provided by LATA Environmental Services of Kentucky, LLC (LATA KY) as requested by DOE-PPPO. The pre-remediation data encompassed the time frame for the Site Investigations Phases 1 and 2, completed in 1989 and beyond. (Pre-1989 data were not requested by DOE-PPPO.) The environmental data file provided to ORISE was initially reviewed to ensure completeness of the data requested by DOE-PPPO from LATA KY. A number of results were identified, for example, as not being expressed in the requested concentration units of picocuries per gram (pCi/g). Those results were not included in the analyses; however, the number of results excluded for this reason (i.e., 423) was insignificant compared to the total number of data points (i.e., 28,639).

For the analyses, the data were filtered in more detail and of the data that exceeded the DOE-PPPO proposed ALs, the lowest result of the duplicate or split-sample was excluded. The largest result of the duplicate or split-sample was retained based on guidance in DOE 2011a. Maps were generated using the computer software ArcGIS (Version 10). ArcGIS facilitates sorting, visualization, and analysis of geographic data. The maps depict the geographic location of the data and any exceedances compared to the two sets of DOE-PPPO proposed ALs for the “DOE-Owned Property Outside the Limited Area” (“Property”).

The results of the analyses indicate that some environmental soil and sediment activity concentrations for Cs-137, Np-237, Pu-239/240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235 and

U-238 exceed both sets of DOE-PPPO proposed ALs. Am-241 and Pu-238 were the only two radionuclides with all results below the DOE-PPPO proposed ALs. The number of samples for each radionuclide that exceeded the DOE-PPPO proposed ALs were less than 10% compared to the total number of samples for each radionuclide. Of this small percentage (less than 10%), the majority of the samples with activity concentrations exceeding the proposed ALs were samples collected along outfall ditches leading from the Paducah Gaseous Diffusion Plant (PGDP) limited area, especially along the North-South Diversion Ditch (NSDD) and Outfall 011.

1.0: INTRODUCTION

1.1 PADUCAH SITE DESCRIPTION AND LAND USE

The U.S. Department of Energy (DOE) Paducah Gaseous Diffusion Plant (PGDP) is an active uranium enrichment facility located approximately 10 miles (mi) west of Paducah, Kentucky and 3.5 mi south of the Ohio River in the western part of McCracken County (Figure 1-1 excerpted from PRS 2010).

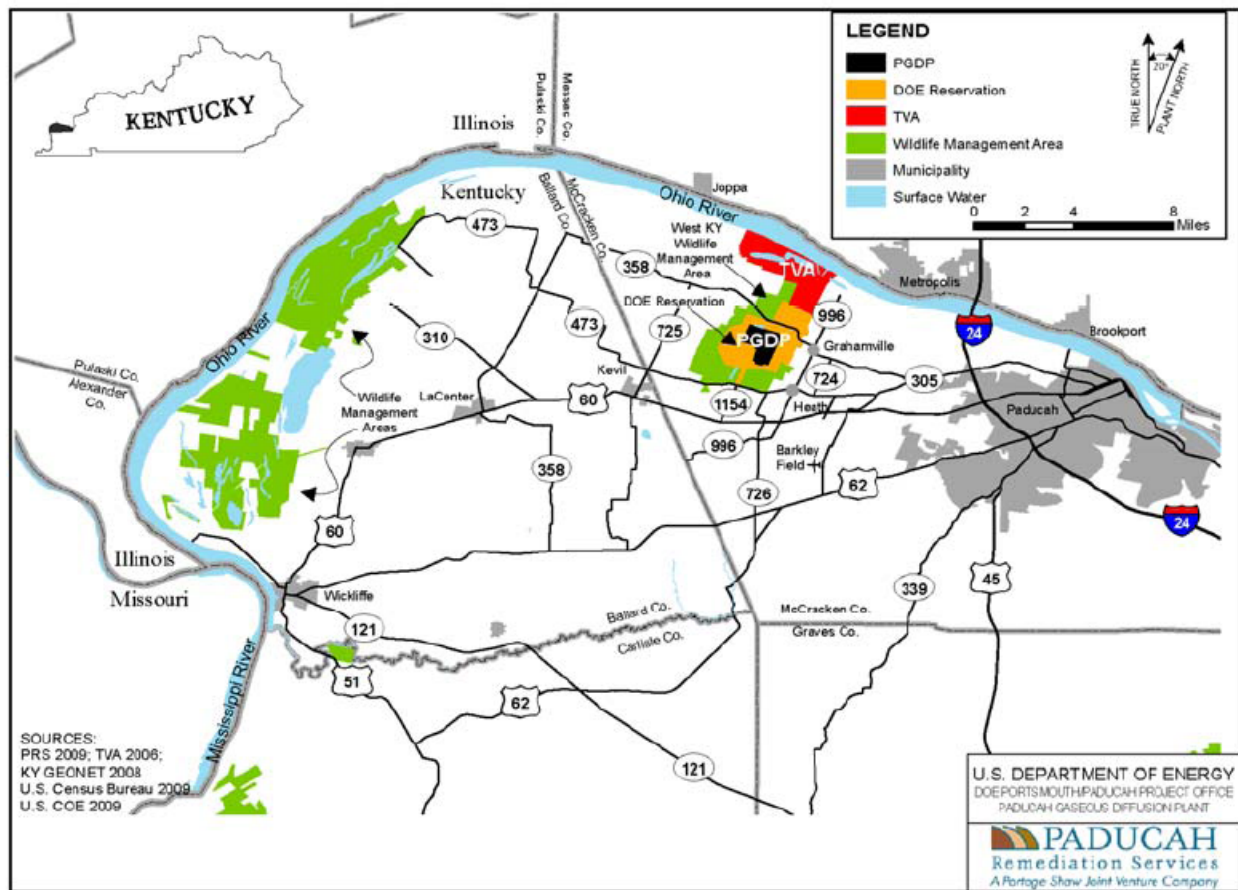


Figure 1-1. Location of the Paducah Site

The plant is situated on 3,424 acres of land owned by DOE. Approximately 748 acres comprise the industrial portion of PGDP, located within a fenced security area. The DOE-owned property surrounding the PGDP limited area includes 1,986 acres licensed to the Commonwealth of Kentucky as part of the West Kentucky Wildlife Management Area (WKWMA) for wildlife conservation and recreational purposes (PRS 2008 and DOE 2008). This area is part of the WKWMA and borders PGDP to the north, west, and south. The WKWMA is an important recreational resource for Western Kentucky and is used by more than 10,000 people each year. Major recreational activities include hunting, field trials for dogs and horses, trail riding, fishing, and skeet shooting. North of the DOE-owned property, the Tennessee Valley Authority (TVA) operates the Shawnee Steam Plant, TVA property designated as industrial (DOE 2003). Figure 1-2 (recreated by LATA KY based on Figure 2.1 from DOE 2003) illustrates the reasonably anticipated future land use of the DOE-owned property and surrounding areas.

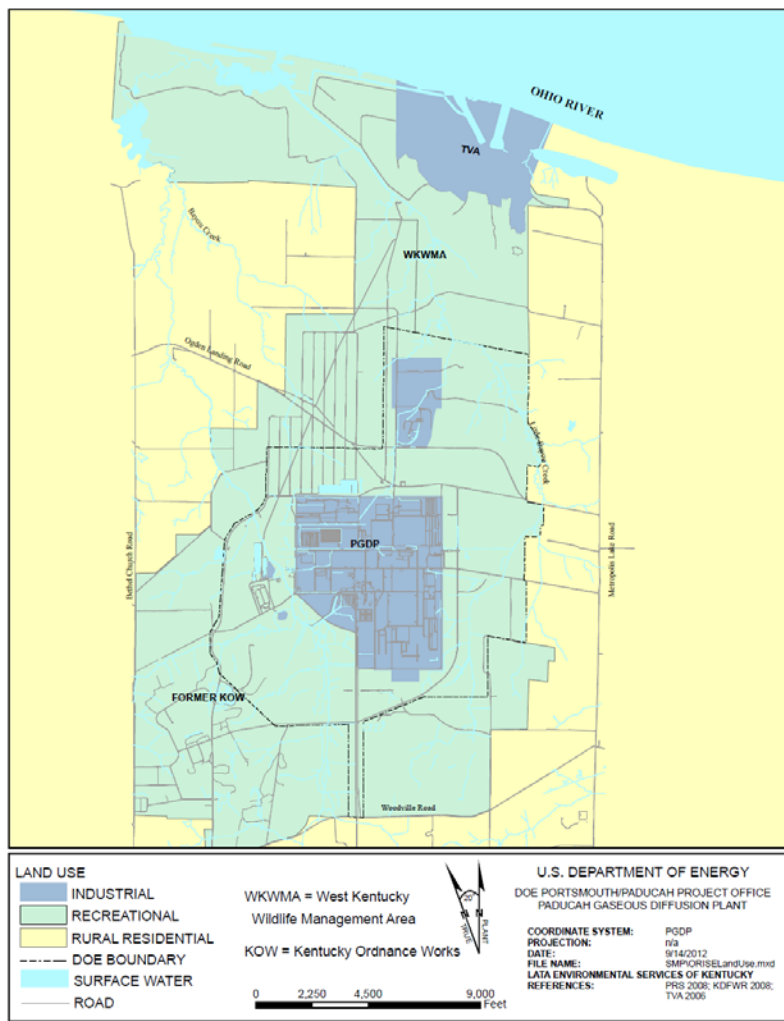


Figure 2.1. Reasonably Anticipated Future Land Use

Figure 1-2. Reasonably Anticipated Land Use of the DOE-Owned Property and Surrounding Areas

The PGDP is posted government property and trespassing is prohibited. Access to the PGDP limited area (i.e., the area inside the security fence) is controlled by guarded checkpoints, a perimeter fence, and vehicle barriers, and is subject to routine patrol and visual inspection by armed plant protective forces.

The PGDP limited area is heavily industrialized and the reasonably anticipated future land use is also industrial; however, the land area surrounding the plant is dominated by agricultural and non-agricultural vegetated areas as illustrated in Figure 1-3 (figure provided by LATA KY). In the agricultural vegetated areas for the WKWMA and the “Property,” crops are planted for wildlife management usage and not for commercial or residential use. Final decisions associated with future land use will be made in conjunction with the remedial action process under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

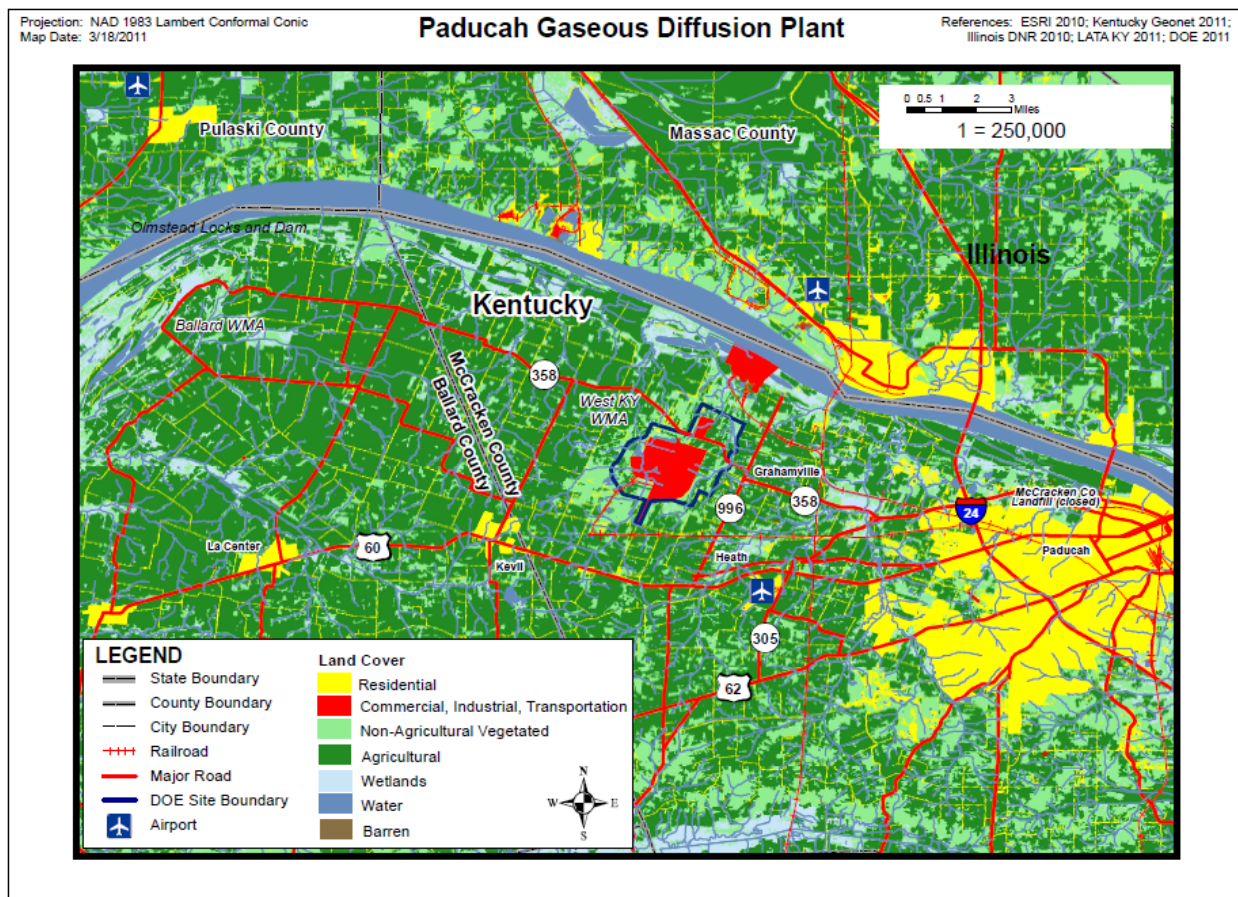


Figure 1-3. Current Land Cover in the Region near PGDP

1.2 ENVIRONMENTAL ACTIVITIES

As stated in the *Paducah Site Annual Site Environmental Report for Calendar Year 2010* (LATA KY, 2012):

“DOE requires that environmental monitoring be conducted and documented for all of its facilities under the purview of DOE Order 231.1A, *Environment, Safety, and Health Reporting*. Several other laws, regulations, and DOE directives require compliance with environmental standards...

“Environmental monitoring consists of the following two major activities: effluent monitoring and environmental surveillance. Effluent monitoring is the direct measurement or the collection and analysis of samples of liquid and gaseous discharges to the environment. Environmental surveillance is the direct measurement or the collection and analysis of samples consisting of ambient air, surface water, groundwater, soil, biota, and other media. Environmental monitoring is performed to characterize and quantify contaminants, assess radiation exposure, demonstrate compliance with applicable standards and permit requirements, and detect and assess the effects, if any, on the local population and environment. Multiple samples are collected throughout the year and are analyzed for radioactivity, chemical constituents, and various physical properties.

“The overall goals for DOE/EM [Environmental Management] are to protect site personnel, the environment, and Paducah Site neighbors and to maintain full compliance with all current environmental regulations. The current environmental strategy is to prevent noncompliance, to identify any current compliance issues, and to develop a system for resolution. The long-range goal of DOE/EM is to reduce exposures of the public, workers, and biota to harmful chemicals and radiation.”

Environmental assessments and remediation activities are currently being conducted by DOE at the PGDP. The Oak Ridge Institute for Science and Education (ORISE) was contracted by DOE Portsmouth/Paducah Project Office (DOE-PPPO) to conduct a comparison of environmental soil and sediment data collected for the areas outside the limited area and inside the boundary represented by Woodville Road, Metropolis Lake Road, and Bethel Church Road north to the Ohio River with DOE-PPPO proposed Authorized Limits (ALs). Figure 1-4 identifies the DOE-owned property, DOE-owned industrial areas (e.g., PGDP limited area and Solid Waste Management Units [SWMU]), DOE water policy boundary¹, and non-DOE property (e.g., WKWMA and TVA). Areas

¹ DOE established a water policy in 1994 as part of the residential well sampling program that started in 1988 when off-site contamination of TCE and Tc-99 was discovered. The water policy provides that in the event contamination originating from the Paducah site is detected above plant (PGDP) action levels a response would be initiated by the Paducah site. Alternative water supplies are provided to those residences through connection to the municipal water system, or, in the event of a time lapse between discovery and the ability to complete connections, bottled water is made available. DOE pays for installation cost of water systems and the monthly charges for water service to residences within the established water policy area (PRS 2010).

outside the scope of this task include DOE-owned industrial areas (e.g., PGDP limited area and SWMU).

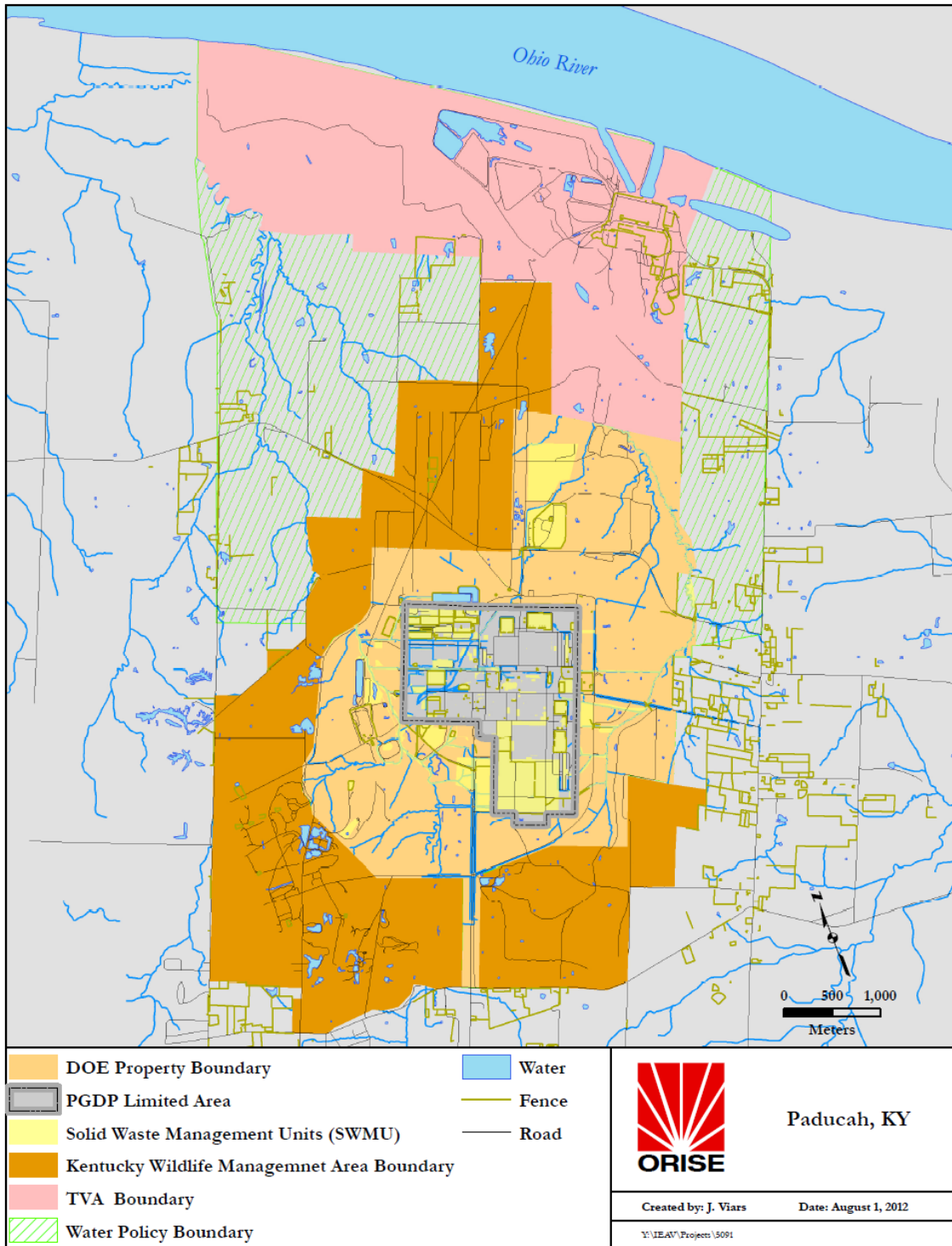


Figure 1-4. Map of DOE-Owned Property and Surrounding Areas

Figure 1-4 was used as a template to plot the soil and sediment data for comparison against the DOE-PPPO proposed ALs.

2.0: MATERIALS AND METHODS

This section includes the DOE-PPPO proposed ALs, information about the computer software used, the method for assessing the environmental soil and sediment data for 13 radionuclides, and other pertinent information for the analyses presented in this report. A detailed description of the targeted radionuclides used is included in ORISE 2012 and DOE-PPPO 2012.

2.1 DOE-PPPO PROPOSED AUTHORIZED LIMITS

Two sets of ALs for 13 targeted radionuclides, with and without deed restrictions, were proposed by DOE-PPPO for the “Property.” The two sets of ALs are presented in Table 2-1 along with background concentrations for the “Property.” The background concentrations are a fraction of the DOE-PPPO proposed ALs. The background concentrations were excerpted from DOE 2011a, Table A.12. *Background Concentrations for Surface and Subsurface Soil at PGDP*. Details on the derivation of these DOE-PPPO proposed ALs are provided in DOE-PPPO 2012.

Table 2-1. DOE-PPPO Proposed Authorized Limits and Background Concentrations for the “Property”

Radionuclide	Background Concentrations		DOE-PPPO Proposed ALs with Deed Restrictions	DOE-PPPO Proposed ALs without Deed Restrictions
	Surface soil	Subsurface soil	(pCi/g) ^f	(pCi/g) ^f
Am-241	– ^a	– ^a	130	32
Cs-137	0.49	0.28	8.0	8.0
Np-237 ^b	0.1	– ^c	9.4	2.4
Pu-238 ^b	0.073	– ^c	160	40
Pu-239 ^{b,d}	0.025	– ^c	150 ^d	35 ^d
Pu-240 ^d	– ^a	– ^a	150 ^d	35 ^d
Tc-99	2.5	2.8	420	105
Th-228	1.6	1.6	14	51
Th-230	1.5	1.4	26	6.5
Th-232	1.5	1.5	7.0	5 ^g
U-234	1.2 ^e	1.2 ^e	540	135
U-235	0.06 ^e	0.06 ^e	22	5.5
U-238	1.2	1.2	540	135

^a Am-241 and Pu-240 are not included in Table A.12 from DOE 2011a.

^b Per DOE 2011a, Table A.12, footnote: “Concentrations for these radionuclides in subsurface soil were not derived.”

^c Per DOE 2011a, Table A.12, footnote: “Data are not available or not applicable.”

^d For the purpose of this report, the proposed AL for Pu-239 and Pu-240 is assigned to Pu-239/240. The AL for Pu-239/240 is then compared with Pu-239 and Pu-239/240 soil and sediment data. There is no soil or sediment data available for Pu-240.

^e Per DOE 2011a, Table A.12, footnote: “The values listed for uranium-234 and uranium-235 are not from the 1996 background study, but are derived from the natural isotopic abundance ratio and the uranium-238 values. The values for

these radionuclides that appeared in the 2001 version of the Risk Methods Document (DOE 2001) were the UTLs of measured values for the individual isotopes as reported in the PGDP background study (DOE 1997)."

^f Above background concentrations of radioactive material.

^g This is a pre-approved Authorized Limit per DOE O 458.1, Change 2, Section 4. k. (f)1 a for Th-232 (and its progeny Th-228) averaged over a 100m² area.

2.2 METHODS FOR RADIONUCLIDE DATA MANAGEMENT AND MAPPING

This section includes the procedure describing how the pre-remediation environmental soil and sediment data provided by LATA KY were filtered, analyzed, and mapped using ArcGIS. Additional information regarding this software is provided in Section 2.3.

Pre-remediation data were used in the analysis to provide information showing where ALs are likely to be exceeded (along waterways leading from the plant and along Little Bayou Creek) and where ALs are unlikely to be exceeded. No attempt was made to verify sampling locations as part of this analysis.

Note: The electronic dataset evaluated by ORISE is included in a compact disc as part of this report; if necessary, the dataset can be obtained from DOE-PPPO.

2.2.1 PROCEDURE

1. The data were provided for 13 radionuclides (i.e., Am-241, Cs-137, Np-237, Pu-238, Pu-239, Pu-239/240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235 [and "Activity of U-235"], and U-238). The data were provided in one Microsoft Excel (Excel) spreadsheet which contained three separate worksheets, categorized by depth intervals (i.e., null depth, 0–1 ft, and 1 ft and below). The pre-remediation data were requested for the timeframe that encompasses the Site Investigations Phases 1 and 2 completed in 1989 and beyond. Pre-1989 data were not requested from LATA Environmental Services of Kentucky, LLC (LATA KY) by DOE-PPPO.
2. The Excel spreadsheet was reviewed for completeness and to ensure that the information requested by DOE-PPPO was appropriately provided by LATA KY.
3. For this analysis, sample reporting units were required in picocuries per gram (pCi/g). Therefore, the Excel spreadsheet was reviewed against this requirement. The majority of the data were considered to be complete with the exception of a number of sample points where incompatible units such as mg/kg, ng, ng/g, µg, µg/g, and pCi/L were identified. As requested by DOE-PPPO, these reporting units were considered invalid and subsequently excluded from the analysis (see Attachment A).

4. The three worksheets were combined into one worksheet and the data filtered by radionuclide, units of pCi/g, and depth (0–10 ft, including null depths) using ArcGIS. The data for each radionuclide was exported to a separate worksheet. Specific steps were performed for U-235 and Pu-239/240:
 - a. For the data corresponding to U-235, data for “U-235” and also for “Activity of U-235” were placed into one worksheet.
 - b. For the data corresponding to Pu-239/240, data for “Pu-239” and also for “Pu-239/240” were placed into one worksheet.
5. After the initial filtering, the radionuclide data results were compared to the DOE-PPPO ALs (both with and without deed restrictions). The data were submitted to the project team for review and approval.
6. Following the external review, additional filtering was performed using Excel to exclude duplicate results from the data that exceeded the ALs. The highest result of the duplicate or split-sample was retained in the analyses. This is consistent with the guidance on the use of duplicate or split-sample analyses in DOE 2011a.
7. The data were re-submitted to the project team for review and approval before plotting the data on maps.
8. Once the data were filtered and analyzed, the data were depicted on the Paducah site maps using ArcGIS. The maps show data points for areas outside the limited area, and inside the boundary represented by Woodville Road, Metropolis Lake Road, and Bethel Church Road north to the Ohio River. The maps were generated using the geographic information system (GIS) layers (shape files) provided by LATA KY. The following were provided in state plane (feet):
 - a. PGDP Areas (Security and Plant)—this is the PGDP Limited Area
 - b. Property Boundary
 - c. Water Policy Boundary
 - d. Roads
 - e. Surface Water (creeks and drainage channels)
 - f. Water Bodies (Ohio River, lakes, ponds, lagoons)
 - g. Fence Line

- h. Solid Waste Management Units (SWMU)—including the shape file for the C-746-U Landfill
- i. TVA (Shawnee Steam Plant) Boundary
- j. Kentucky Wildlife Management Area Boundary

2.3 COMPUTER SOFTWARE

Analyses presented in this report were developed using ArcGIS, computer software developed by Environmental Systems Research Institute, Inc. (ESRI).

2.3.1 ESRI ARCGIS

ESRI 2012 describes ESRI ArcGIS as a “geographic information system (GIS) software for visualizing, managing, creating, and analyzing geographic data.” ArcGIS facilitates the understanding of the geographic context of the data, by allowing the user to see relationships and identify patterns in useful ways (ESRI 2012).

ESRI ArcGIS Version 10 was used in this project by ORISE’s geographer to depict the location of the samples/data points and compare the sample results with the two sets of DOE-PPPO proposed ALs. The analyses excluded samples/data points for the PGDP limited area.

3.0: RESULTS AND DISCUSSION

A total of 21 maps were generated using ArcGIS. The information illustrated on the maps included the data points/sample results (in pCi/g) for the areas outside the PGDP limited area and surrounding areas, including those areas that are non-DOE property. Two sets of maps were generated based on the two sets of DOE-PPPO proposed ALs for the Property with and without deed restrictions. Attachment B contains the maps for the radionuclides where no samples exceeded any of the ALs; Attachment C has the maps for those radionuclides that exceeded both sets of ALs. Each map includes a comparison of the results with the DOE-PPPO proposed ALs by indicating the number of samples that were above these ALs. Any sample results above the proposed ALs are depicted in red on the maps and the samples below the proposed ALs are depicted in green. It is important to emphasize that the maps do not show each individual sample point because there are instances where several sample points belong to a single sample station. When this occurs, the points are depicted on the maps as one sample. The maps are limited to illustrate data points in pCi/g and data points for a depth of 0–10 ft, including those with null depths as reported by LATA KY. The intent was to include sufficient amount of data to identify sampling locations that are below and above the DOE-PPPO proposed ALs. Further screening of the data may be beneficial for those sampling locations with results above the DOE-PPPO proposed ALs (see Section 4).

Data points in units other than pCi/g were excluded from the analyses since these were considered invalid. Also, the lowest result of duplicate or split-samples of only the data that exceeded the ALs was excluded from the analyses. The maximum result of the duplicate of split-samples was retained based on guidance in DOE 2011a.

A summary of the results depicted on the maps is included in Table 3-1. The table includes the number of soil and sediment samples that were both above and below the two sets of DOE-PPPO proposed ALs. All sample results for Am-241 and Pu-238 were below both sets of proposed ALs. The other radionuclides were present in one or more samples exceeding the DOE-PPPO proposed ALs. However, the number of samples for each radionuclide that exceeded the DOE-PPPO proposed ALs were less than 10% compared to the total number of samples for each radionuclide. Of this small percentage (less than 10%), the majority of the samples with activity concentrations exceeding the proposed ALs were collected along outfall ditches leading from the PGDP limited area, particularly along the North-South Division Ditch (NSDD), east side outfalls, and banks associated with the Little Bayou Creek within the DOE-Owned Property Outside the Limited Area. There were very few samples with activity concentrations exceeding the proposed ALs found in areas such as the west side outfalls and banks associated with the Bayou Creek and unnamed tributaries.

Table 3-1. Summary of Environmental Soil and Sediment Data Comparison with the DOE-PPPO Proposed ALs for the Property with and without Deed Restrictions

Radionuclides	DOE-PPPO Proposed ALs (pCi/g) with Deed Restrictions	Environmental Soil and Sediment Data Above the DOE-PPPO Proposed ALs with Deed Restrictions (0-10 ft depth) ^a	DOE-PPPO Proposed ALs (pCi/g) without Deed Restrictions	Environmental Soil and Sediment Data Above the DOE-PPPO Proposed ALs without Deed Restrictions (0-10 ft depth) ^a
Am-241	130	0/1695	32	0/1695
Cs-137	8.0	8/4266	8.0	8/4266
Np-237	9.4	6/2028	2.4	30/2028
Pu-238	160	0/1294	40	0/1294
Pu-239/240	150	1/2163	35	6/2163
Tc-99	420	11/2534	105	32/2534
Th-228	14	1/1140	5	2/1140
Th-230	26	72/1993	6.5	124/1993
Th-232	7.0	1/1220	5	2/1220
U-234	540	1/1929	135	11/1929
U-235	22	7/1844	5.5	37/1844
U-238	540	67/4557	135	229/4557

^a. The number of samples above the DOE proposed ALs out of the total evaluated for each radionuclide is indicated as: number samples above AL/total of number samples for the radionuclide (e.g.,Cs-137: 8/4266).

An independent evaluation of the data and verification of the analyses was performed.

4.0: CONCLUSIONS AND RECOMMENDATIONS

Considering the data evaluation of all 13 radionuclides in this task, Th-230 and U-238 have the highest number of soil and sediment samples above the DOE-PPPO proposed ALs. While uranium contamination is expected at gaseous diffusion plants and surrounding areas, Th-230 is present because it was within the feed material (uranium oxide or yellowcake) which was processed and converted to uranium hexafluoride on-site at PGDP. Th-230 and other impurities are removed during the conversion of yellowcake to uranium hexafluoride.

A range of soil and sediment sample results exceeding the DOE-PPPO proposed ALs is included in Table 4-1 for each radionuclide as applicable. Some radionuclides had only one or two sample results exceeding the ALs; therefore, the actual results were included (not a range).

Table 4-1. Range of Soil and Sediment Results Above the DOE-PPPO Proposed ALs

Radionuclides	DOE-PPPO Proposed ALs (pCi/g) with Deed Restrictions	Range of Results Above the DOE-PPPO Proposed ALs with Deed Restrictions (pCi/g) ^a	DOE-PPPO Proposed ALs (pCi/g) without Deed Restrictions	Range of Results Above the DOE-PPPO Proposed ALs without Deed Restrictions (pCi/g) ^a
Am-241	130	NA ^b	32	NA ^b
Cs-137	8.0	8.76 - 160	8.0	8.76 - 160
Np-237	9.4	22 - 50.95	2.4	2.41 - 50.95
Pu-238	160	NA ^b	40	NA ^b
Pu-239/240	150	240 ^c	35	39.02 - 240
Tc-99	420	421 - 4700	105	109 - 4700
Th-228	14	163 ^c	5	5.605 and 163 ^c
Th-230	26	26.1 - 755	6.5	6.54 - 755
Th-232	7.0	93.9 ^c	5	5.07 and 93.9 ^c
U-234	540	713 ^c	135	136 - 713
U-235	22	22.3 - 65.1	5.5	5.6 - 65.1
U-238	540	540.57 - 5569.23	135	135 - 5569.23

^a The results above the ALs are summarized by radionuclide in separate worksheets in the electronic dataset.

^b Non-applicable since no data exceeded the DOE-PPPO proposed AL.

^c Only one or two results were above the AL.

Most of the sampling locations with levels above the ALs are found in areas such as the NSDD, east side outfalls, and banks associated with the Little Bayou Creek within the DOE-Owned Property Outside the Limited Area. There were very few sampling locations with levels above the ALs found in areas such as the west outfalls and banks associated with the Bayou Creek, and unnamed tributaries. In 2010, DOE completed remediation of contaminated soils and sediments along the NSDD Sections 3 and 5 and Outfalls 001, 008, 010, 011, and 015 as part of the Surface Water Operable Unit (SWOU) Removal Action Unit at PGDP (DOE 2011b). The removal of sediment

was the primary focus of the removal action since direct contact with sediment was the exposure pathway of concern at the site (DOE 2011b). Under this removal action, identified hot spots were removed and verification of cleanup was conducted. The cleanup levels used in the removal action for the radiological contaminants of concern (COCs) were based on the cumulative excess lifetime cancer risk (ELCR). These cleanup levels are included in this report for reference only. Table 4-2 includes the cancer risk-based cleanup levels used for the NSDD (Sections 3 and 5); and Outfalls (001, 008, 010, 011, and 015 and their associated on-site ditches). Additional information related to this remediation effort is available in DOE 2011b.

Table 4-2. Cleanup Levels for the Radiological COC Based on Carcinogenic Risk^{a,b}

Contaminant of Concern	Risk-Based Concentration (pCi/g)
Am-241	115
Cs-137	8
Np-237	22
Pu-239/240	108
Tc-99	3,825
Th-230	147
Th-232	129
U-234	188
U-235	30
U-238	94

- a. These radionuclide cleanup levels were obtained from Table C.1 in DOE 2011b.
- b. Per DOE 2011b, Table C.1 footnote: "The cleanup levels for SWOU were established in the Engineering Evaluation/Cost Analysis to be protective of both recreational and industrial worker scenarios."

The presence of radioactivity above background in soil and sediment in these areas is due to PGDP releases. In the future, characterization of areas outside the limited area, based on the distribution of contaminants illustrated on the maps, should consider implementation of Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) methodology to classify the areas as Class 1, 2, or 3 in order to conduct the appropriate final status survey effort. This work effort supports environmental remediation goals and potential future property transfer activities. Areas outside the PGDP limited area can be assigned one of the following MARSSIM (2001) classifications according to its contamination potential:

- Class 1 refers to impacted areas that have or had a potential for individual measurements above the AL (in MARSSIM terminology this is the derived concentration guideline level [DCGL]). Remediated areas are generally considered Class 1.
- Class 2 refers to impacted areas that have or had a potential for contamination at a significant fraction of the AL. Individual measurements should not exceed the AL.

- Class 3 refers to impacted areas that have little or no potential for contamination. Individual measurements should not exceed a significant fraction (e.g., 10%–20%) of the AL.
- Non-impacted areas have no potential for contamination. If possible, reference area(s) are established in non-impacted areas.

For instance, the areas that did not exceed the DOE-PPPO proposed ALs and contain levels of residual radioactivity at a very small fraction of the ALs may be classified as Class 3 or potentially non-impacted areas, pending other information.

For the analyses, the data were filtered using a range of 0–10 feet, including null depths. It is common practice in sampling environmental soil and sediments, however, to differentiate sampling depths into surface and subsurface profiles. Surface samples are typically collected from depths of either 0–5 cm (especially useful for uranium contaminants) or 0–15 cm, with subsurface depths beginning at greater than 15 cm. Although these are typical sampling depths, data from 0–10 feet (including null depths) were used since this depth range includes a sufficient amount of data to identify sampling locations that are below and above the DOE-PPPO proposed ALs. For those sampling locations that exceed the DOE-PPPO proposed ALs, further screening of the data may be beneficial in determining surface and subsurface levels that exceeded the DOE-PPPO proposed ALs.

It is important to note that there are uncertainties pertaining to the quality of the dataset provided by LATA KY; therefore, it is recommended that if the data is further utilized by DOE or any other entity, including the public, it should be evaluated in a manner similar to that conducted by ORISE as described in Attachment A.

5.0: REFERENCES

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*ATTACHMENT A: ENVIRONMENTAL SOIL AND SEDIMENT DATA HANDLING
RECORD*

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ENVIRONMENTAL SOIL AND SEDIMENT DATA HANDLING RECORD

This record/log describes how the Excel data spreadsheet provided by LATA KY was handled. It records the number of data points that were excluded from the analyses, i.e.:

1. Data points representing depths greater than 10 feet.
2. Data points with incompatible units (mg/kg, ng, ng/g, µg, µg/g, pCi/L).
3. The lowest results of the duplicate or split-sample data points of only the data that exceeded the ALs.
4. The largest results of the duplicate or split-sample data points; however, were retained based on guidance in DOE 2011a.

Based on the above steps, the following information captures the number of data points included and excluded from the analyses.

The original spreadsheet provided by LATA KY contained three worksheets categorized by depths (null depths, 0–1 ft, and 1ft and below) with a total of 28,639 data points. No changes were made to this particular spreadsheet. An additional spreadsheet was created (a copy of the original) in order to combine the three worksheets and then filter the data based on recommendations made by the project team. The data filtering was performed using ArcGIS, which has the ability to easily filter the data by radionuclide, units of pCi/g, and depth of 10 feet or less including null depths. The filtered data were then exported into new worksheets. The data filtering process was also verified using Excel. Additional filtering of the data was performed using Excel to exclude duplicate results from the data that exceeded the ALs. Excel was used to highlight data and include text to briefly explain the results.

The Excel spreadsheet provided by LATA KY and the Excel spreadsheet created by ORISE are provided in a compact disc as part of this report.

As a result of the data filtering process, a total of 1,976 data points were excluded, leaving the remaining 26,663 data points for inclusion in the analyses. Out of the 1,976 data points excluded, 1,595 data points represented sampling depths greater than 10 ft (73 of these data points had incompatible units); an additional 350 data points were excluded since they had incompatible units; and 31 data points represented the lowest results of the duplicates or split-samples of only the data that exceeded the ALs. Table A-1 summarizes the number of samples excluded from the analyses.

Note: Duplicate or split-sample results of the data that were below the DOE-PPPO proposed ALs were included in the analyses. As a result of this, the total number of samples in the dataset is slightly affected; that is, the total number of samples is slightly larger than what it should be.

Table A-1. Summary of Total Number of Samples Excluded from the Analyses

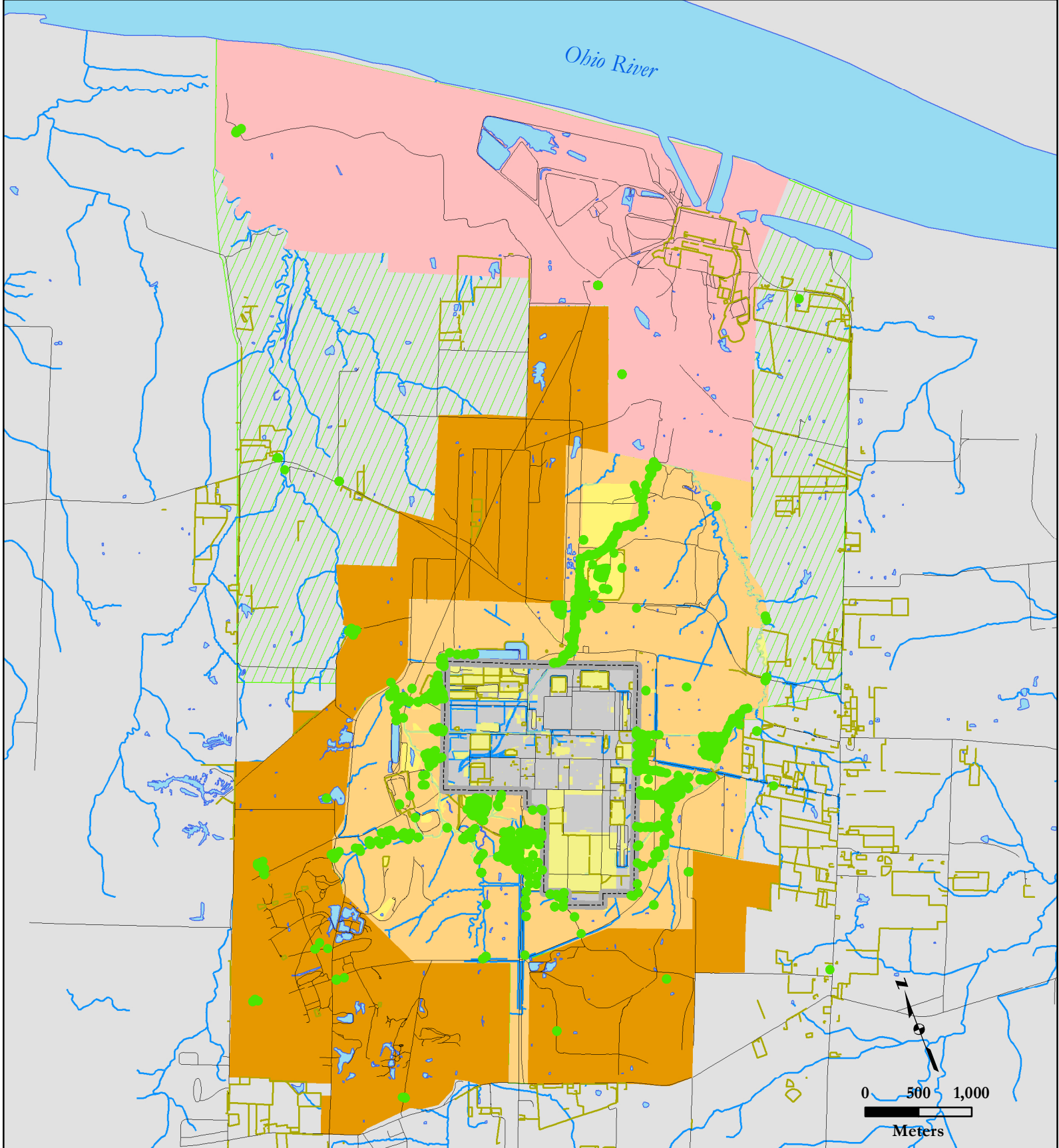
Type of Samples	Number of Samples Excluded
Samples Greater than 10 ft	1595 ^a
Samples in incompatible units (different than pCi/g)	350
Duplicate or Split-Samples ^b	31
Total	1976

^a 73 out 1595 had incompatible units.

^b The lowest result of the duplicates or split-samples of only the data that exceeded the ALs were excluded from the analyses.

*ATTACHMENT B: MAPS OF SOIL AND SEDIMENT DATA BELOW THE DOE-PPPO
AUTHORIZED LIMITS FOR THE PROPERTY WITH AND WITHOUT DEED
RESTRICTIONS*

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- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



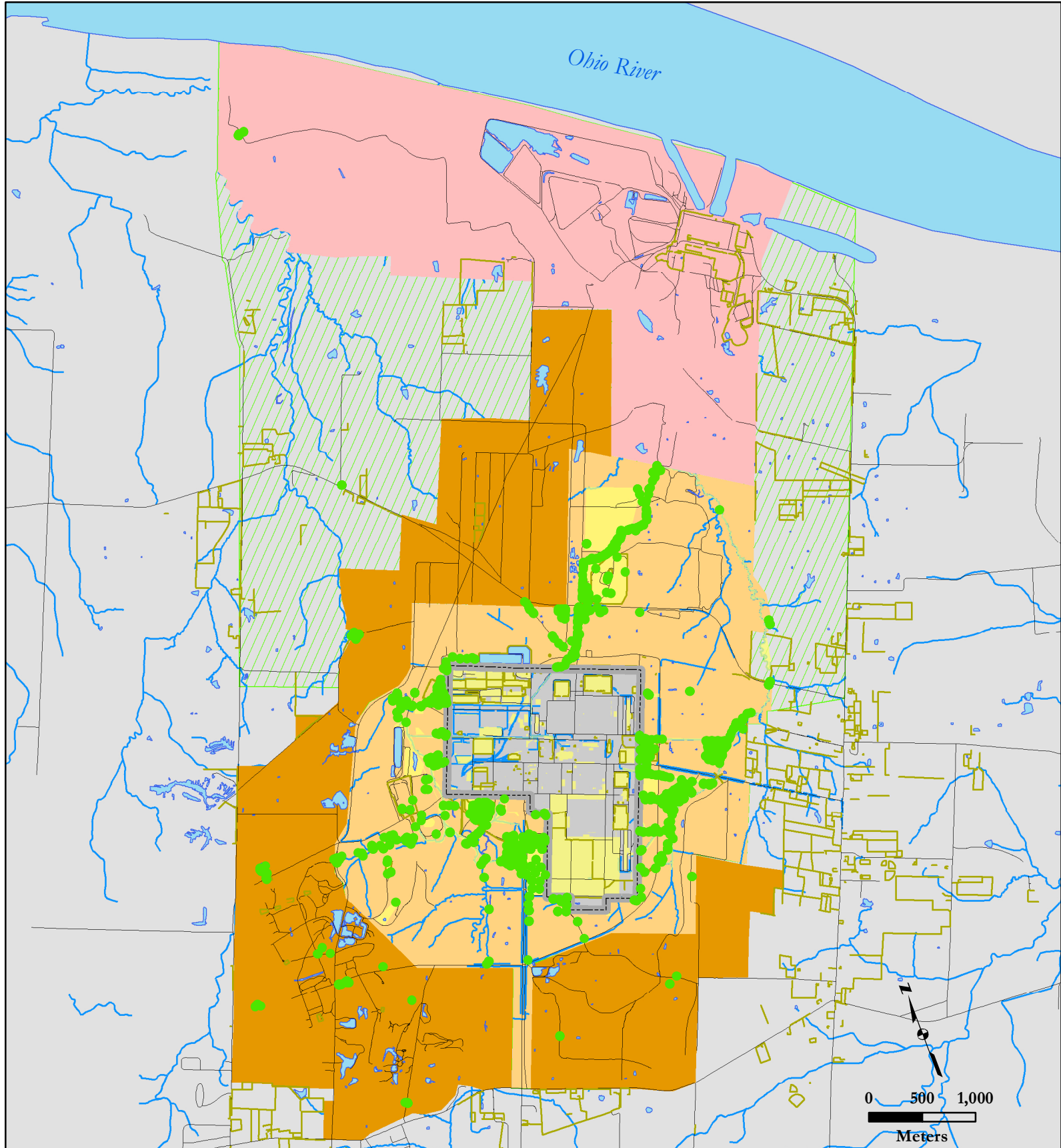
**Am-241
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: All samples below the AL with and without deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



**Pu-238
Soil and
Sediment Samples**

Created by: J. Viars

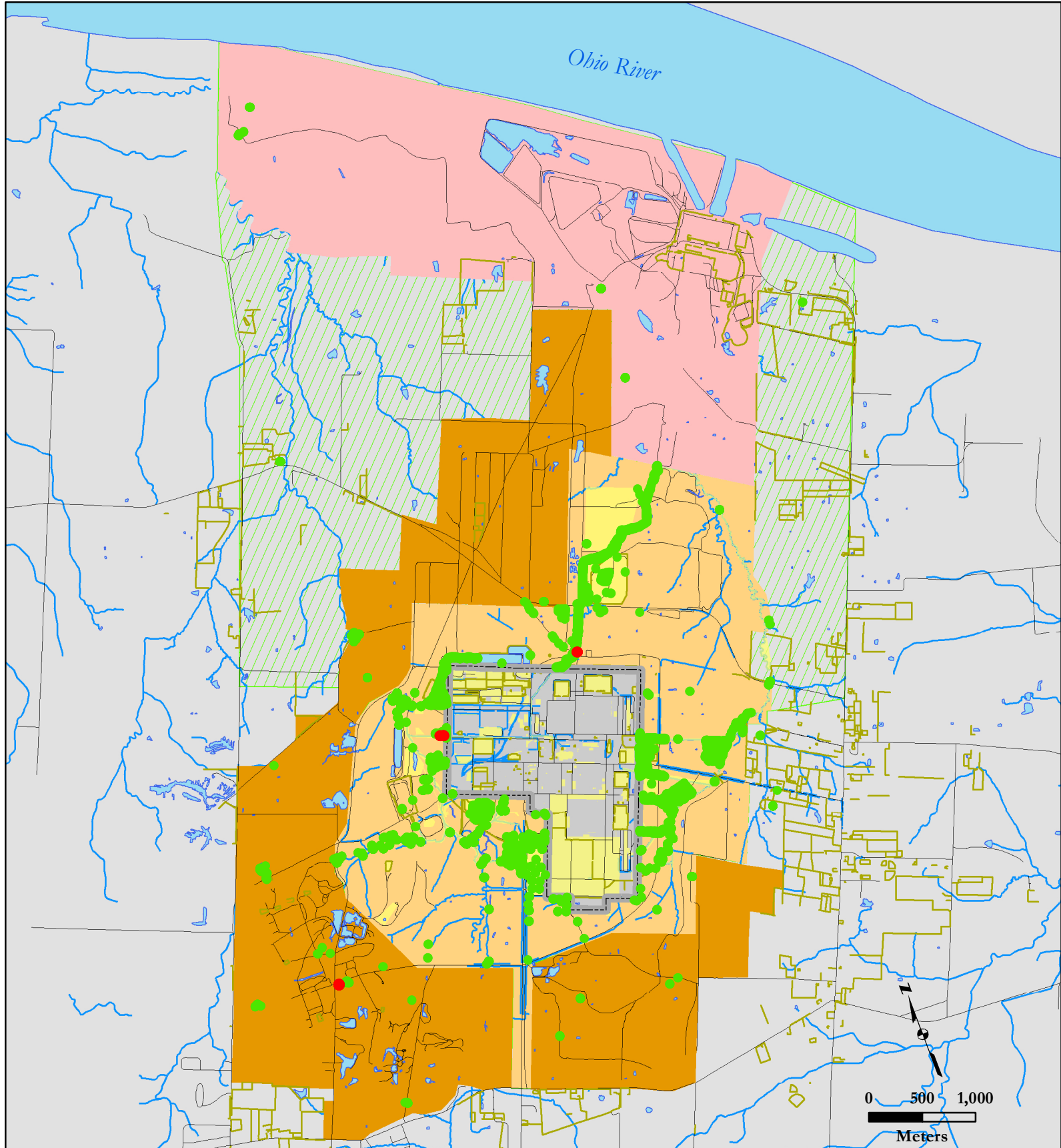
Date: August 1, 2012

Results: All samples below the AL with and without deed restrictions

Y:\IEAW\Projects\5091

*ATTACHMENT C: MAPS OF SOIL AND SEDIMENT DATA ABOVE THE DOE-PPPO
AUTHORIZED LIMITS FOR THE PROPERTY WITH AND WITHOUT DEED
RESTRICTIONS*

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- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



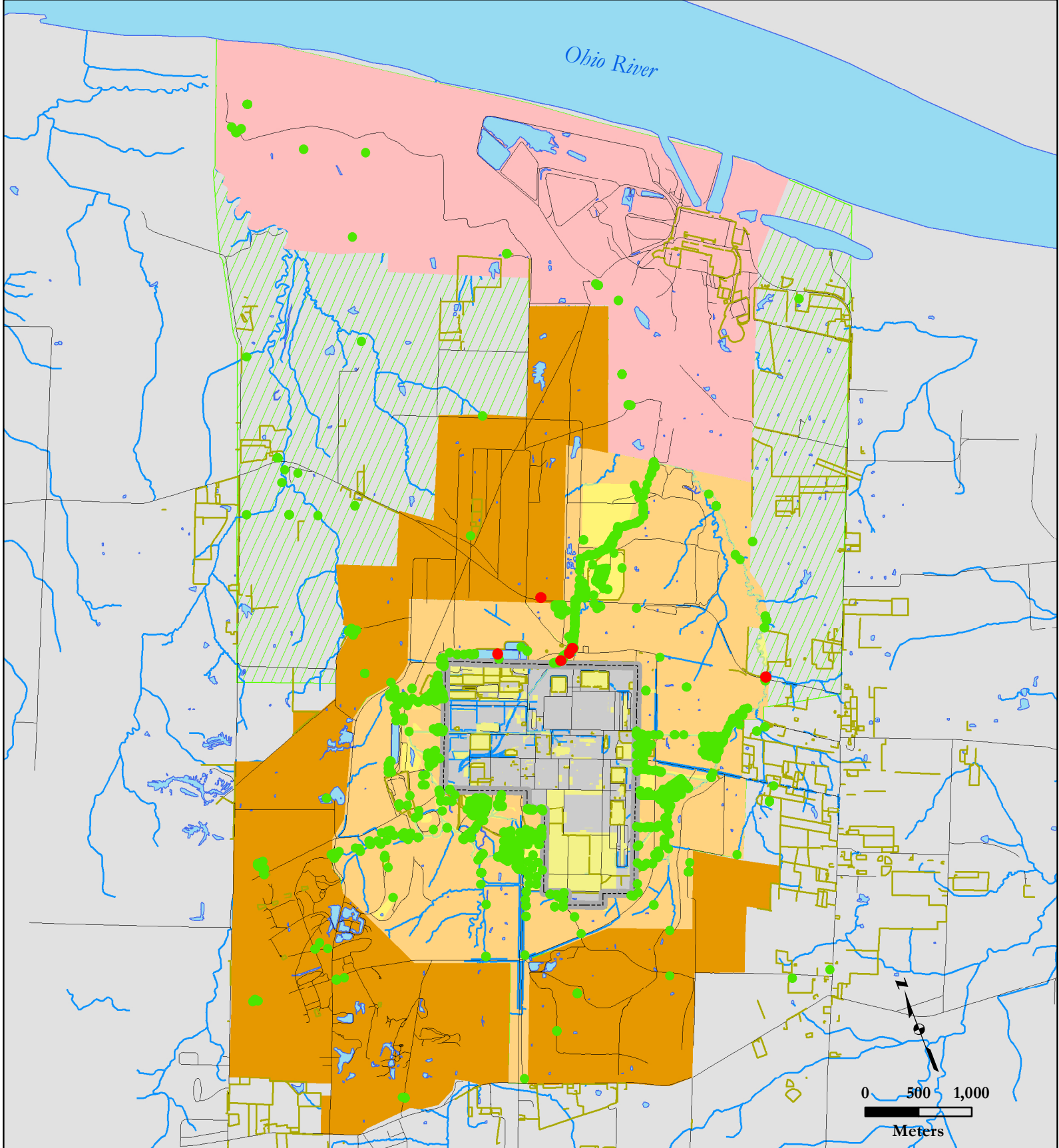
**Cs-137
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 8 samples above the AL with and without deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



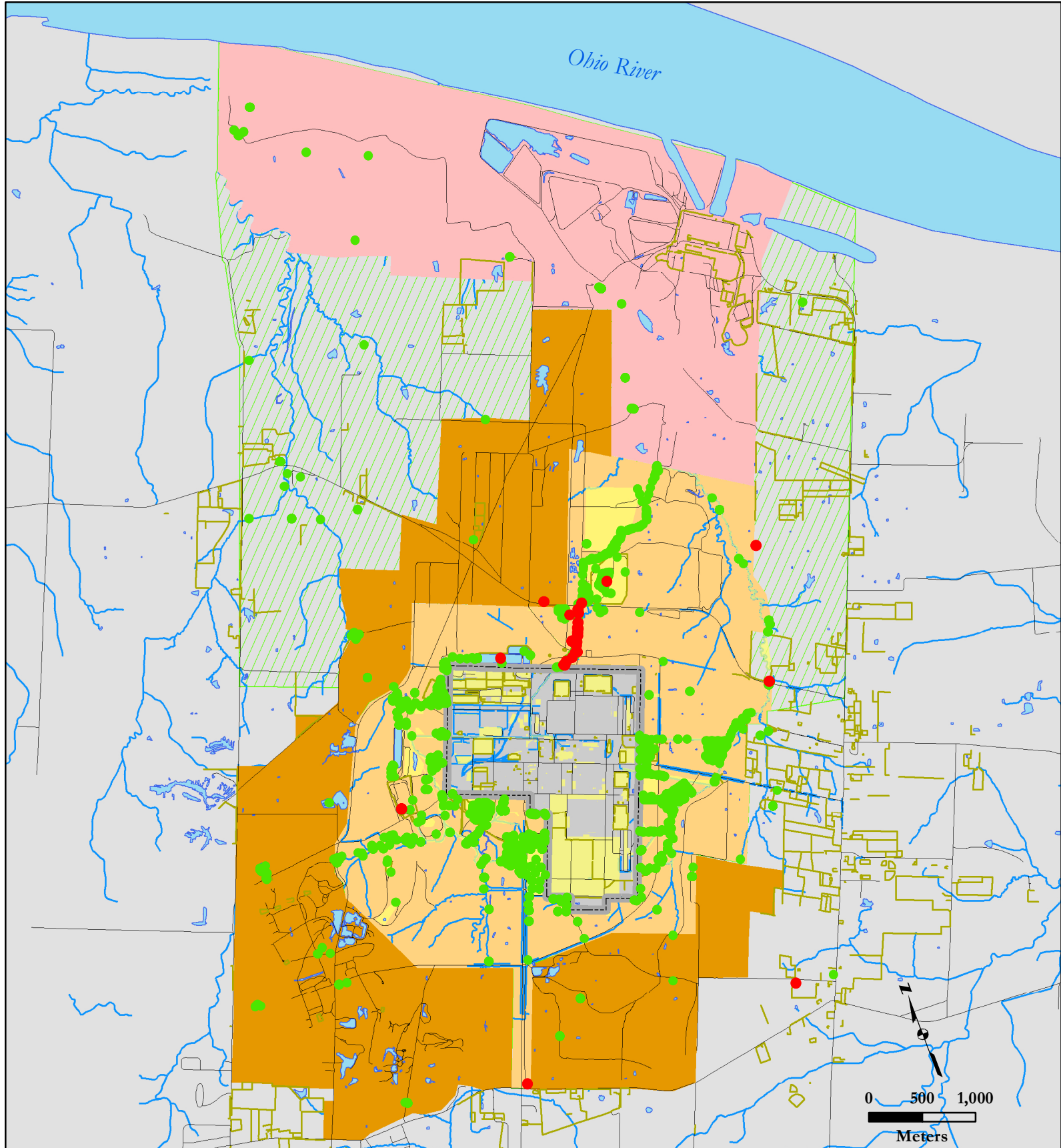
**Np-237
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 6 samples above the AL with deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



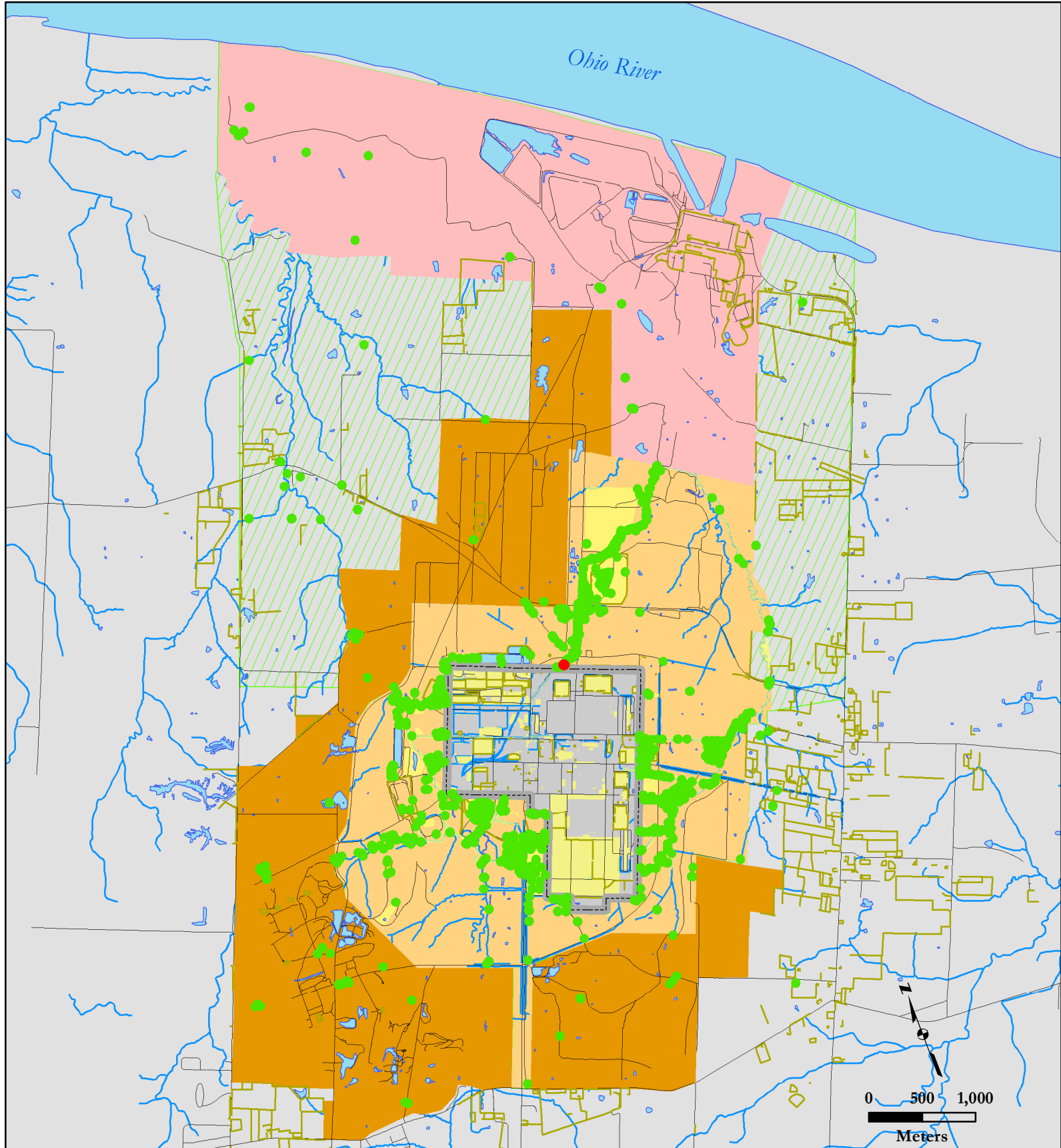
**Np-237
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 30 samples above the AL without deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area

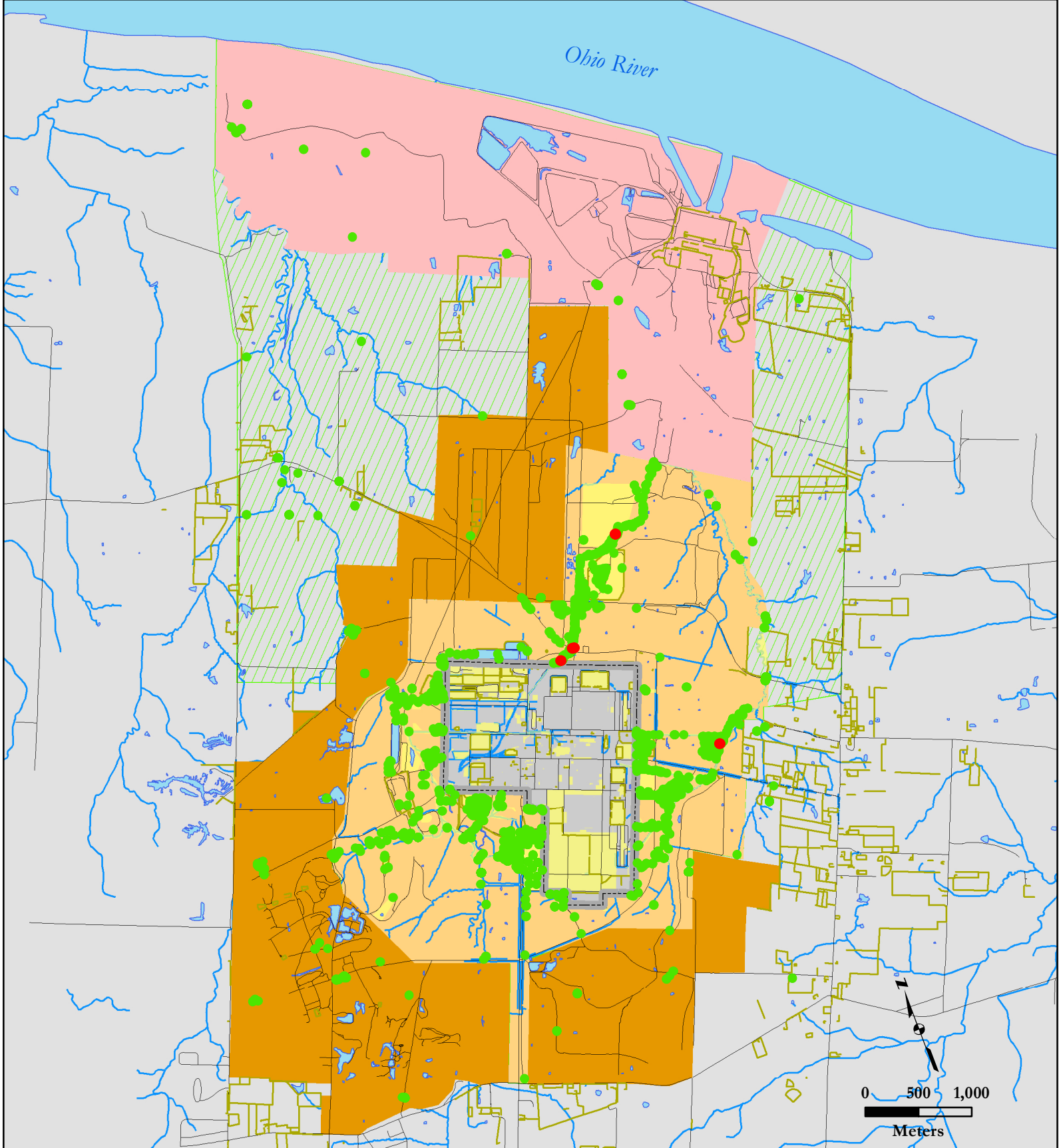


**Pu-239/240
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 1 sample above the AL with deed restrictions



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



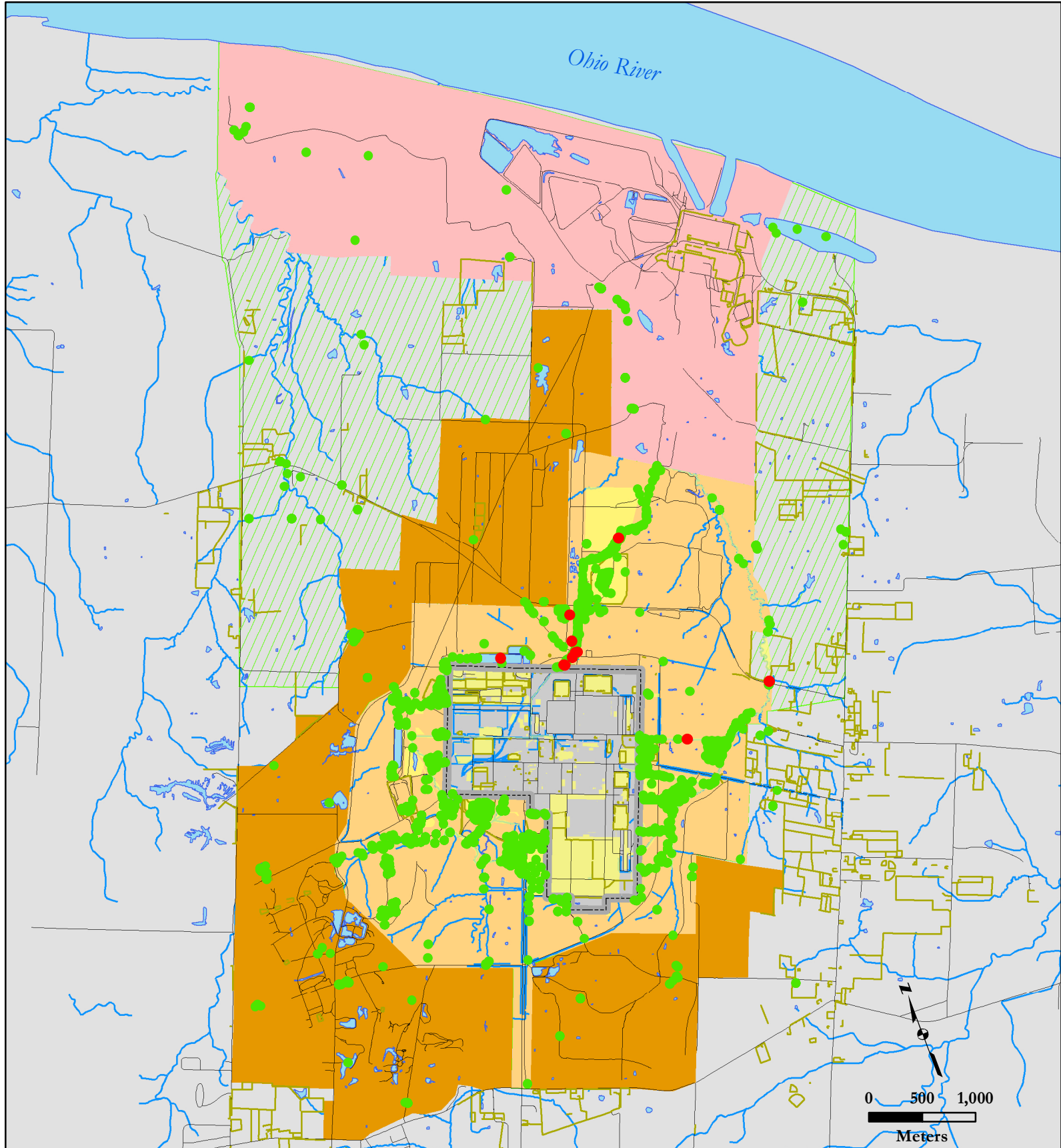
**Pu-239/240
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 6 samples above the AL without deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



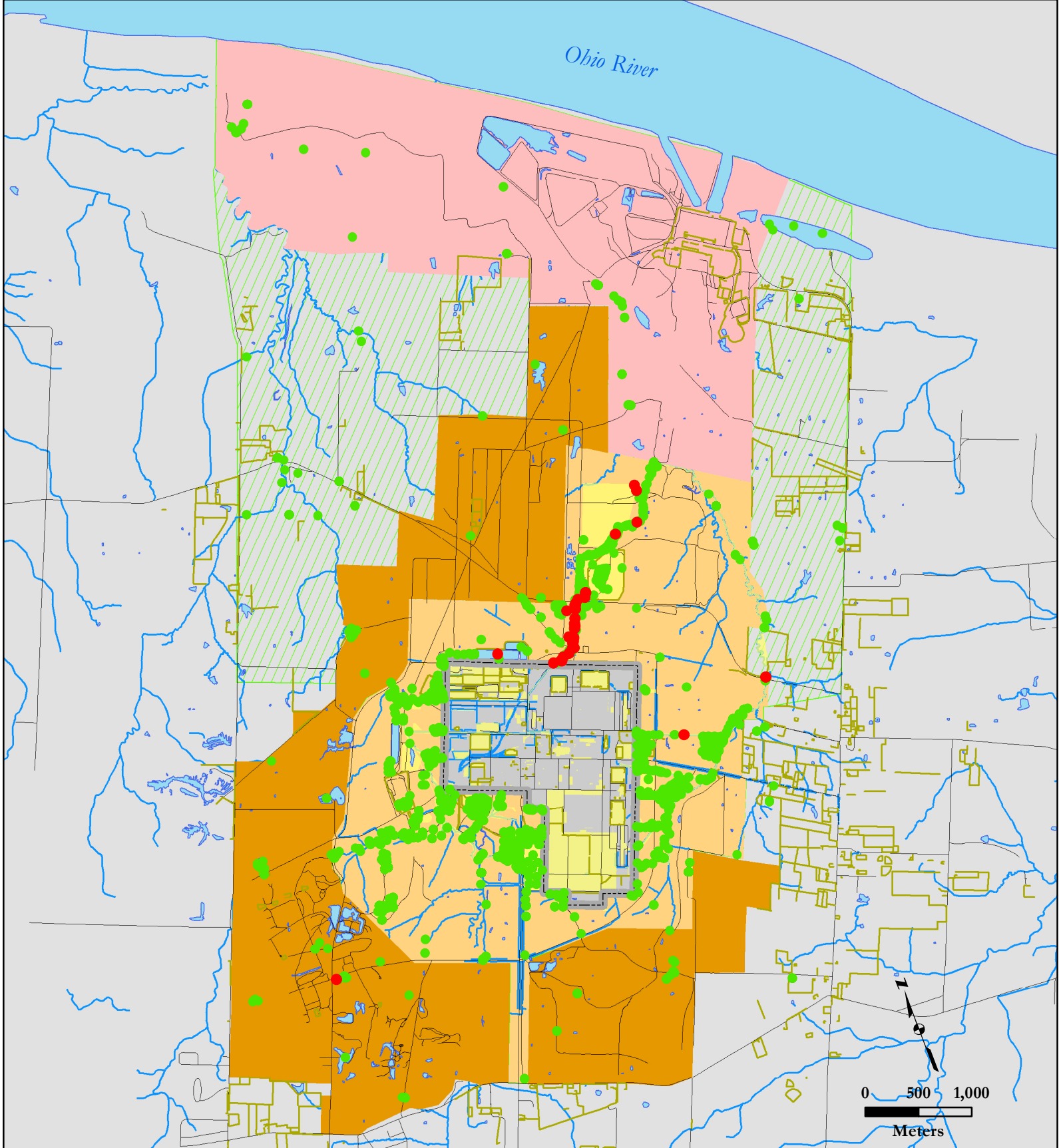
**Tc-99
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 11 samples above the AL with deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



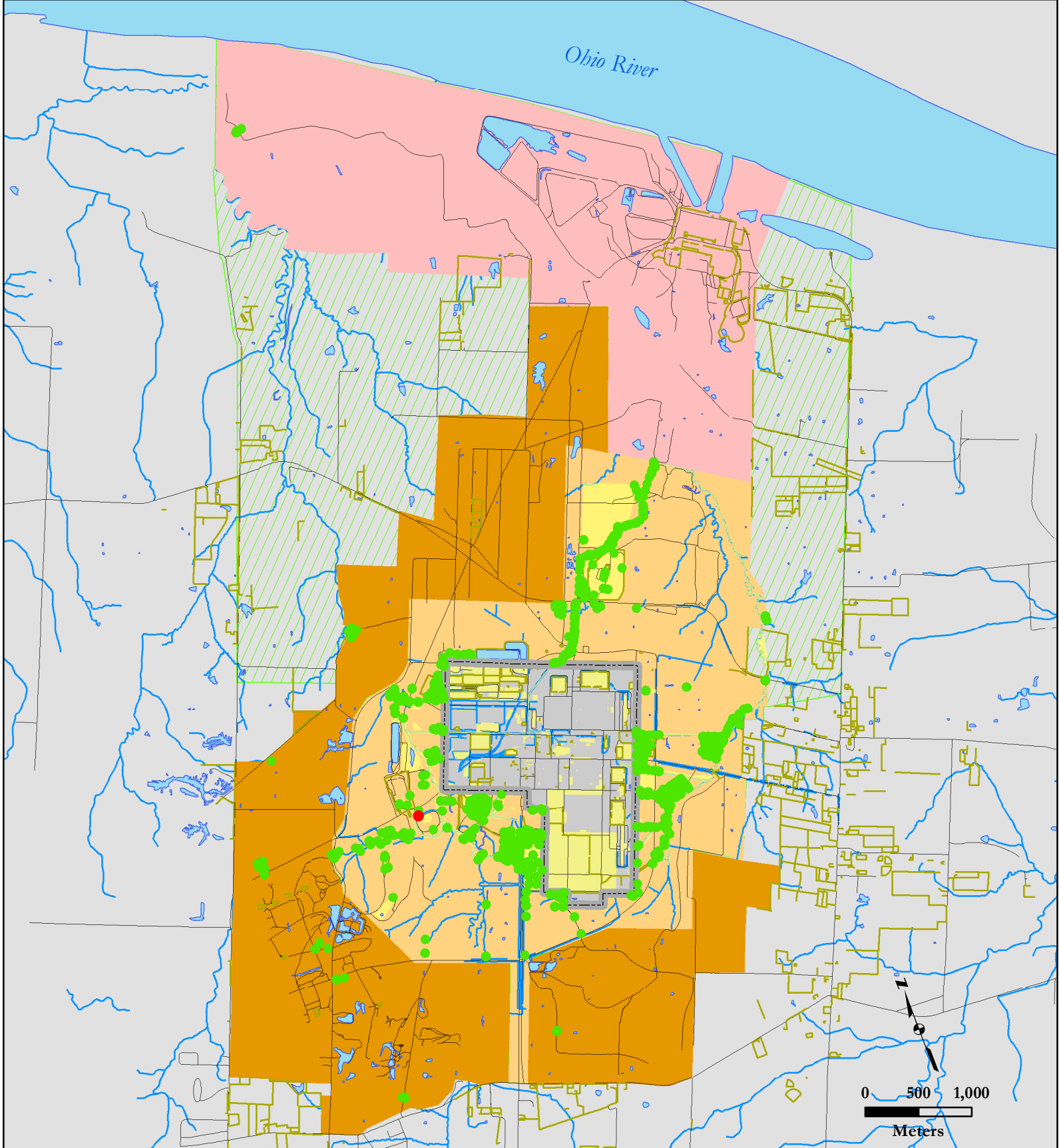
**Tc-99
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 32 samples above the AL without deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



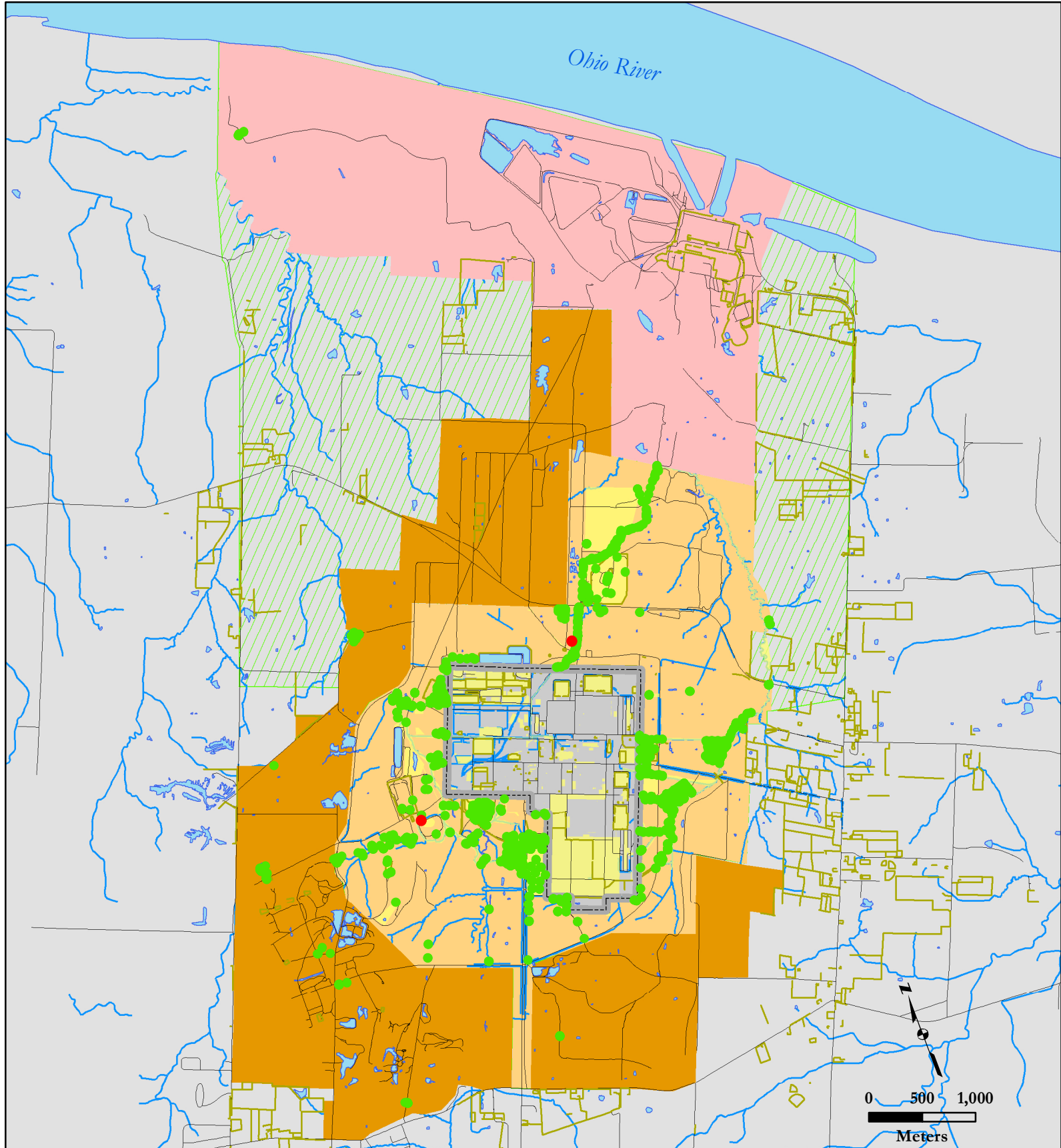
**Th-228
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 1 sample above the AL with deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area

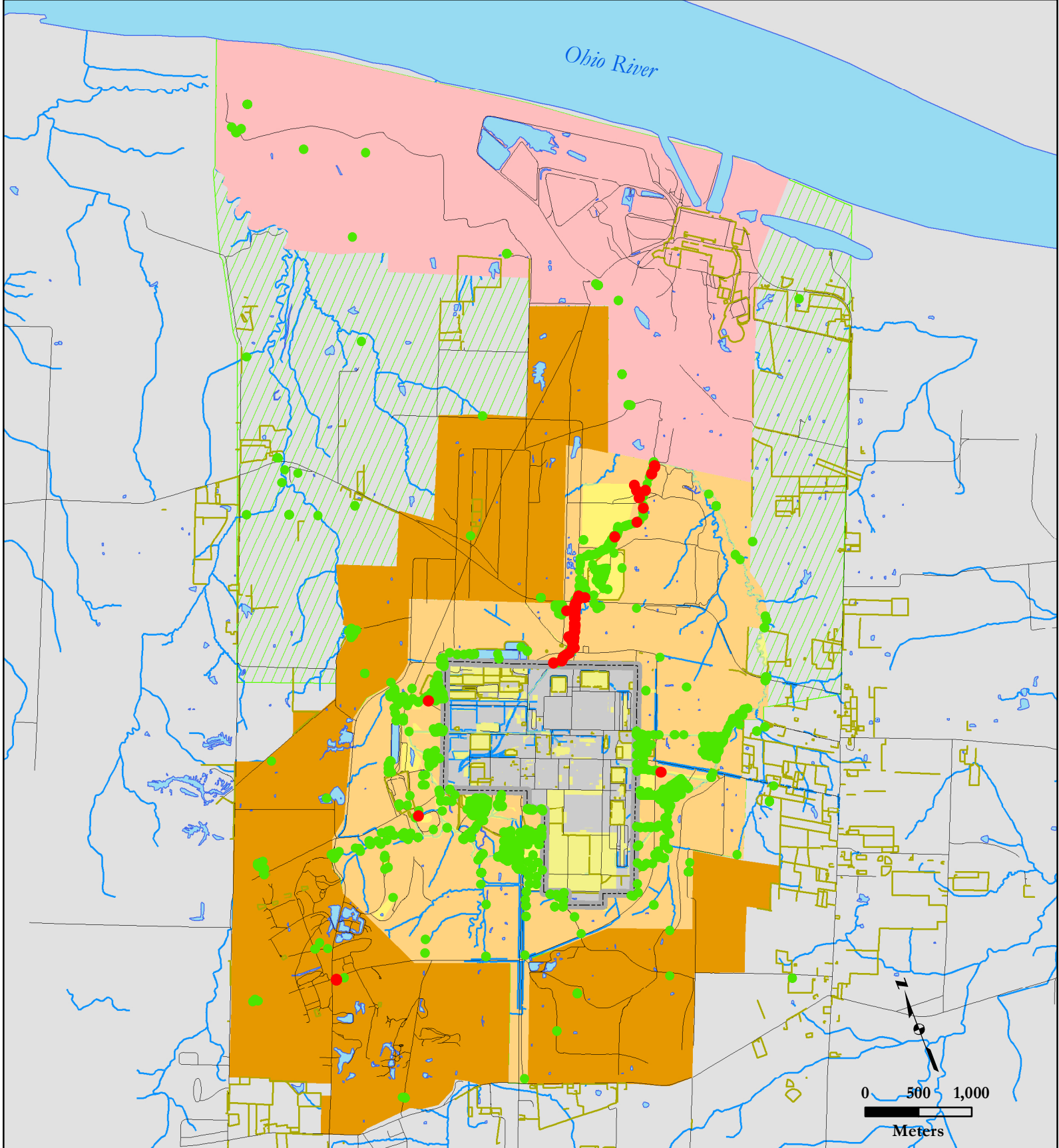


**Th-228
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 2 samples above the AL without deed restrictions



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



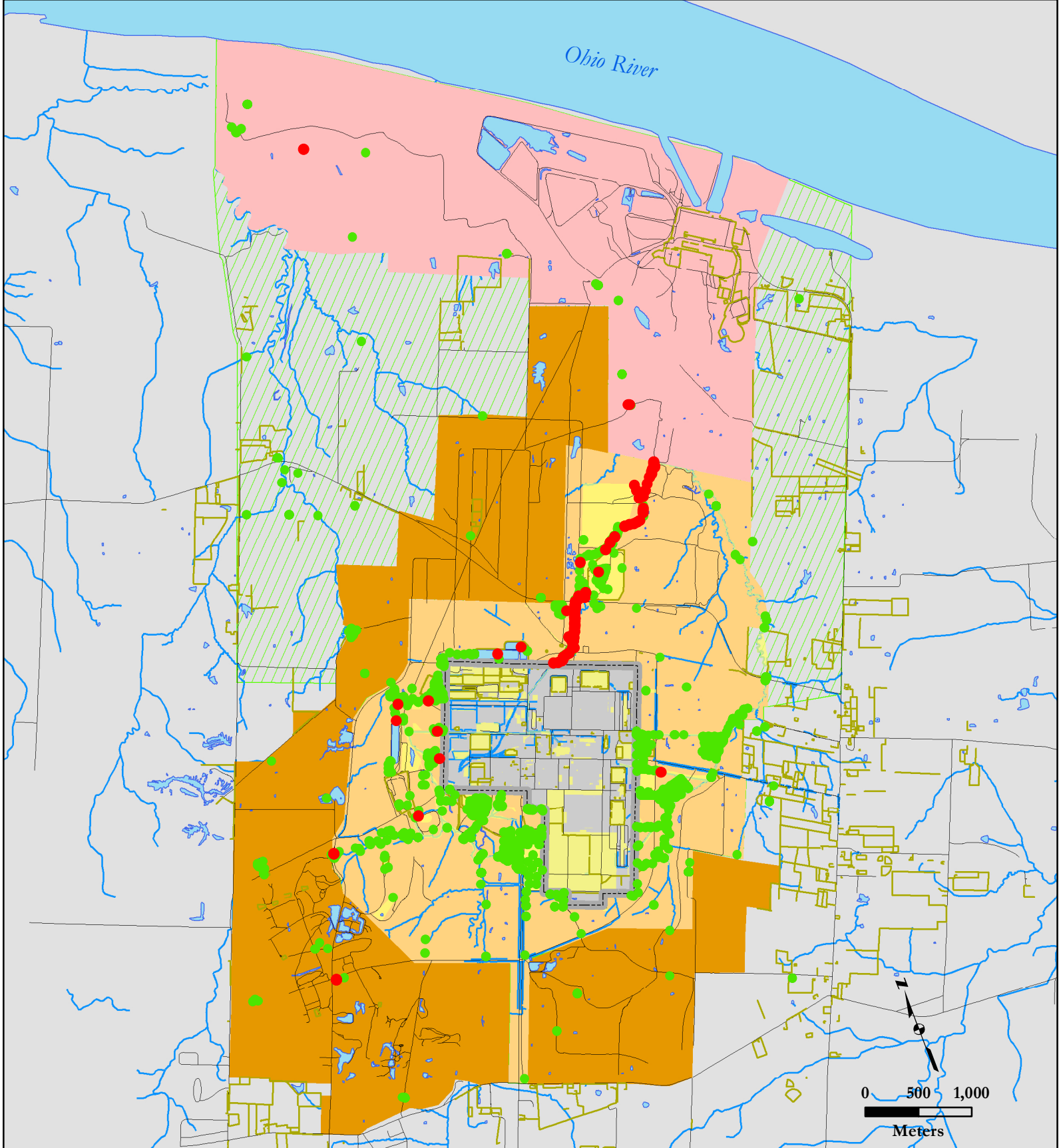
**Th-230
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 72 samples above the AL with deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



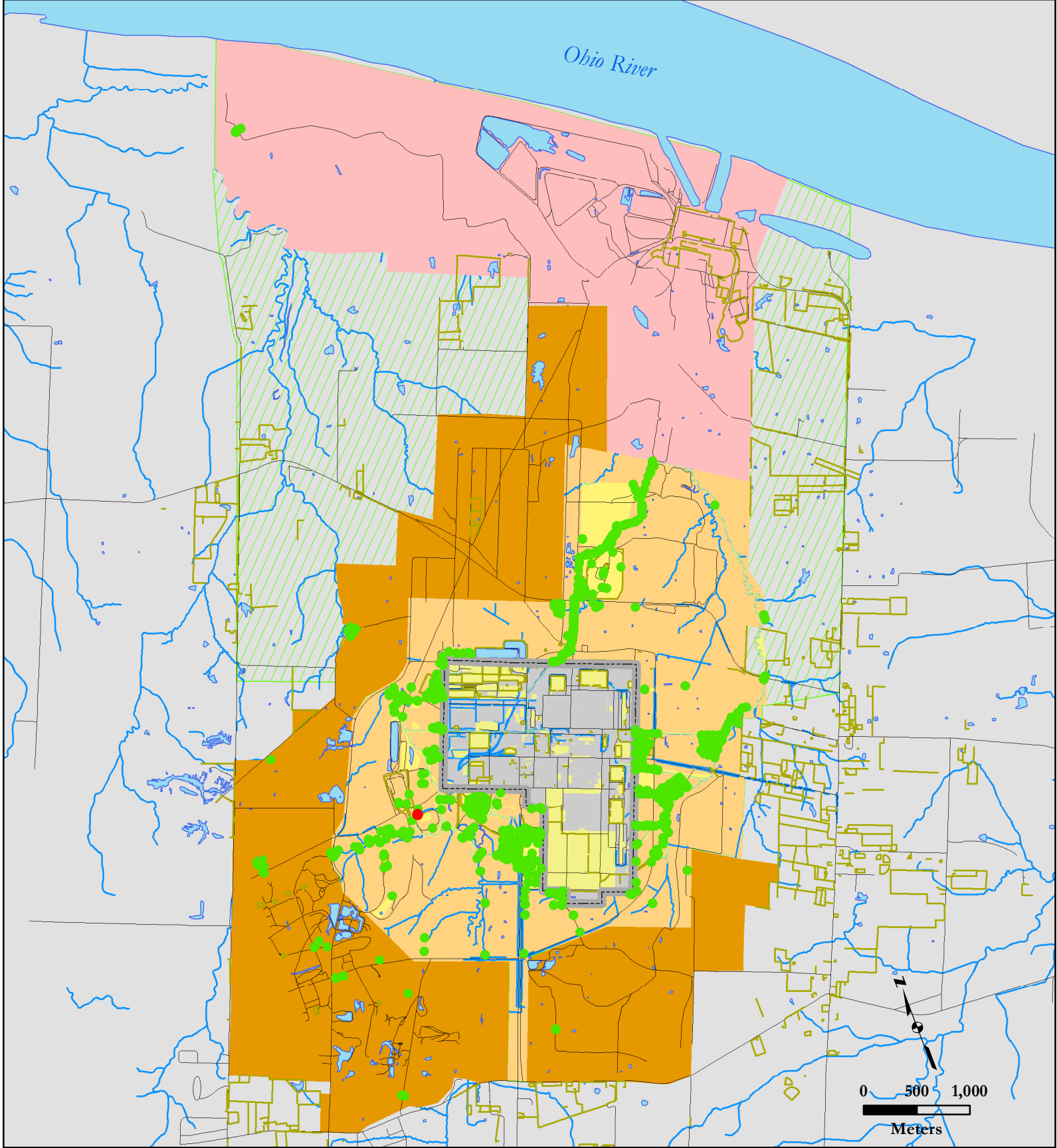
**Th-230
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 124 samples above the AL without deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



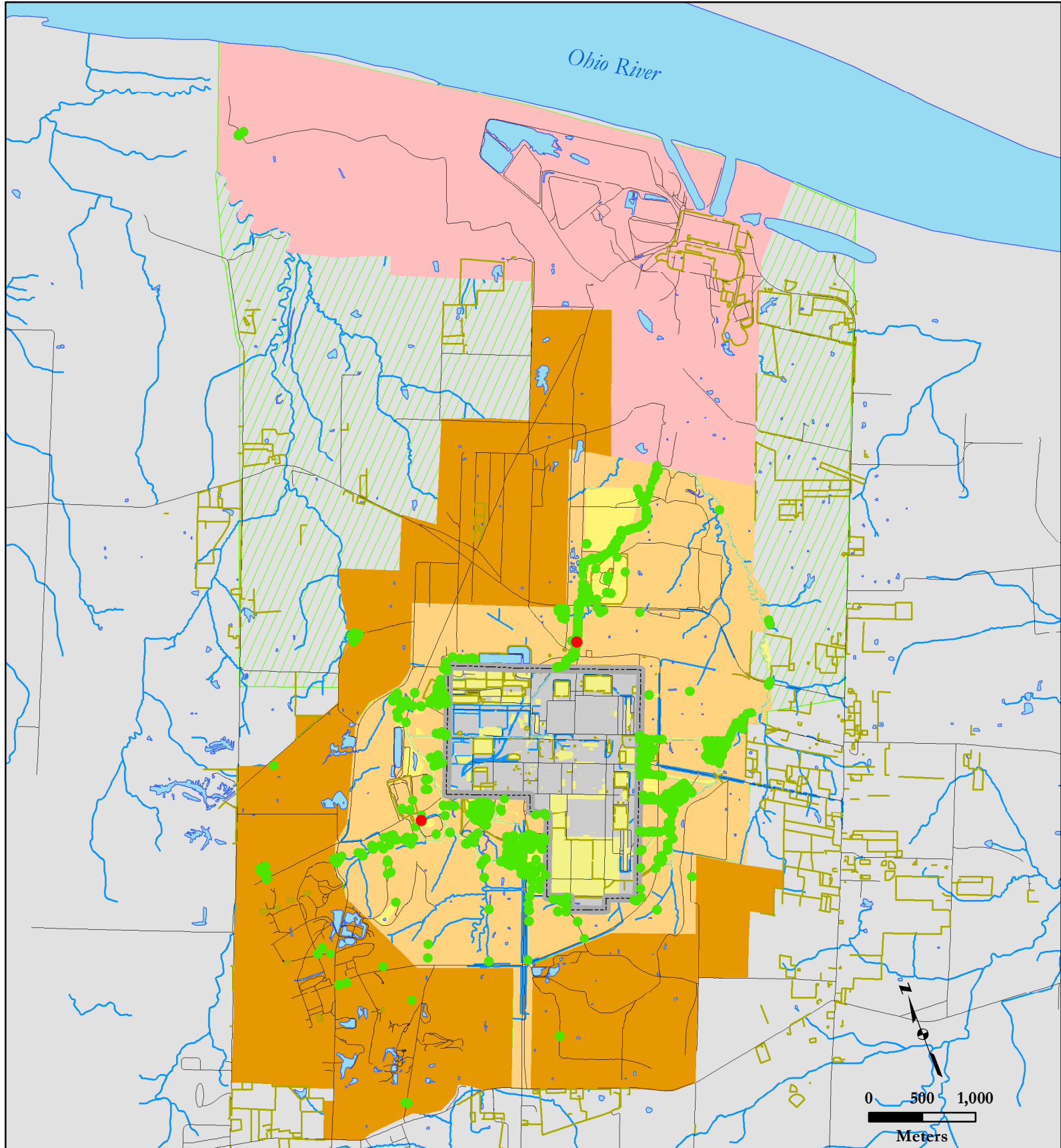
**Th-232
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 1 sample above the AL with deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



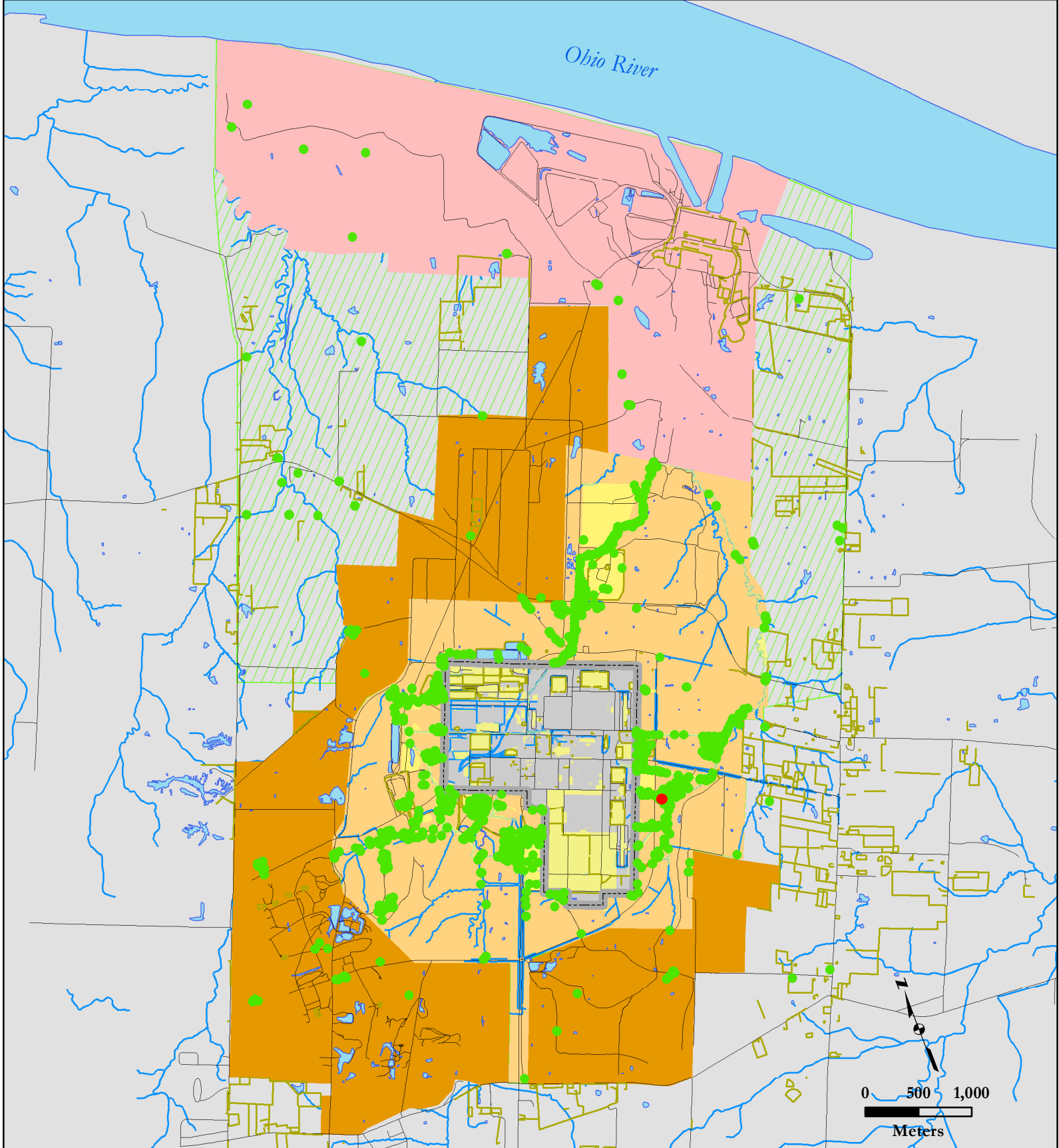
**Th-232
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 2 samples above the AL without deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



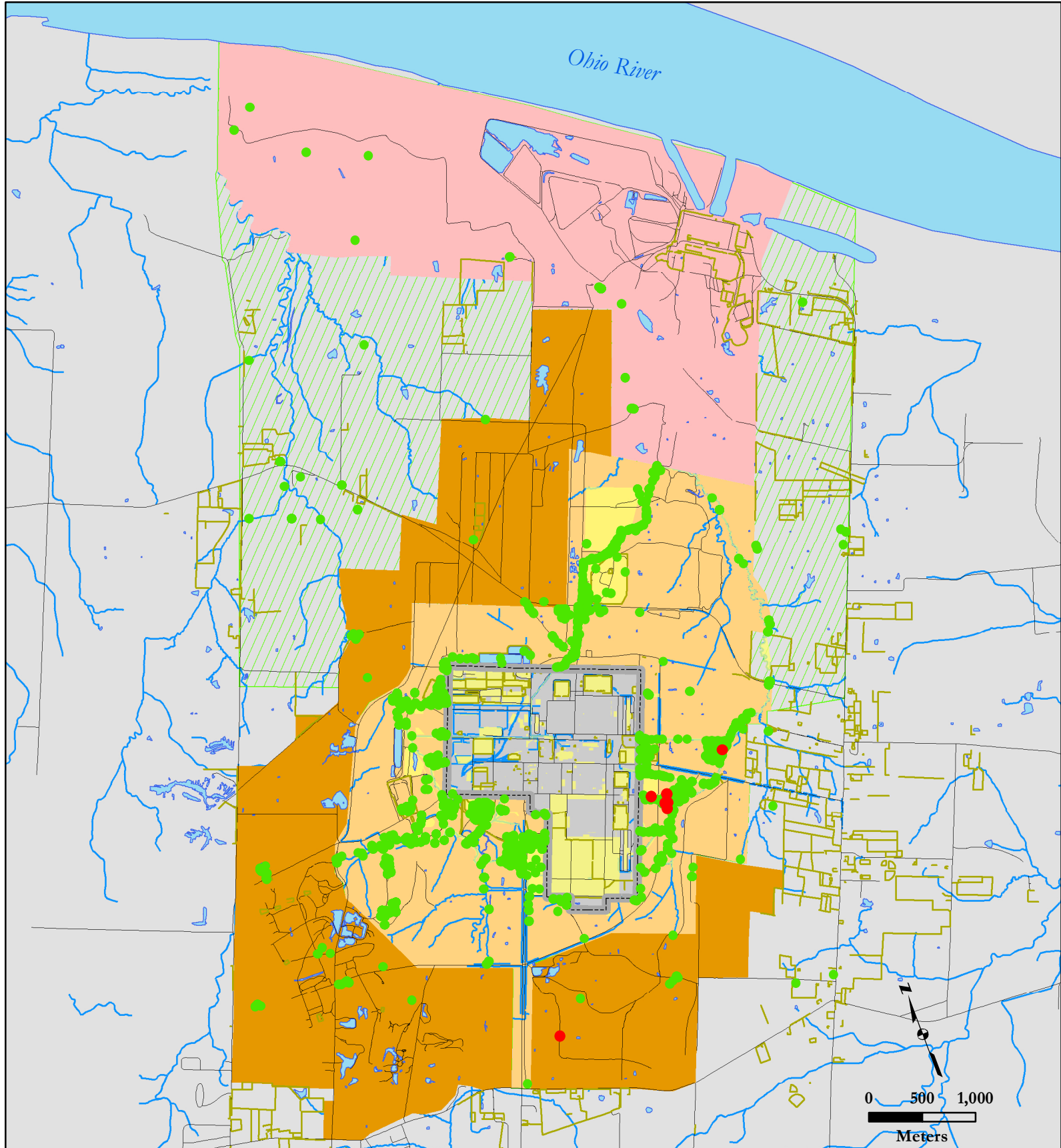
**U-234
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 1 sample above the AL with deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



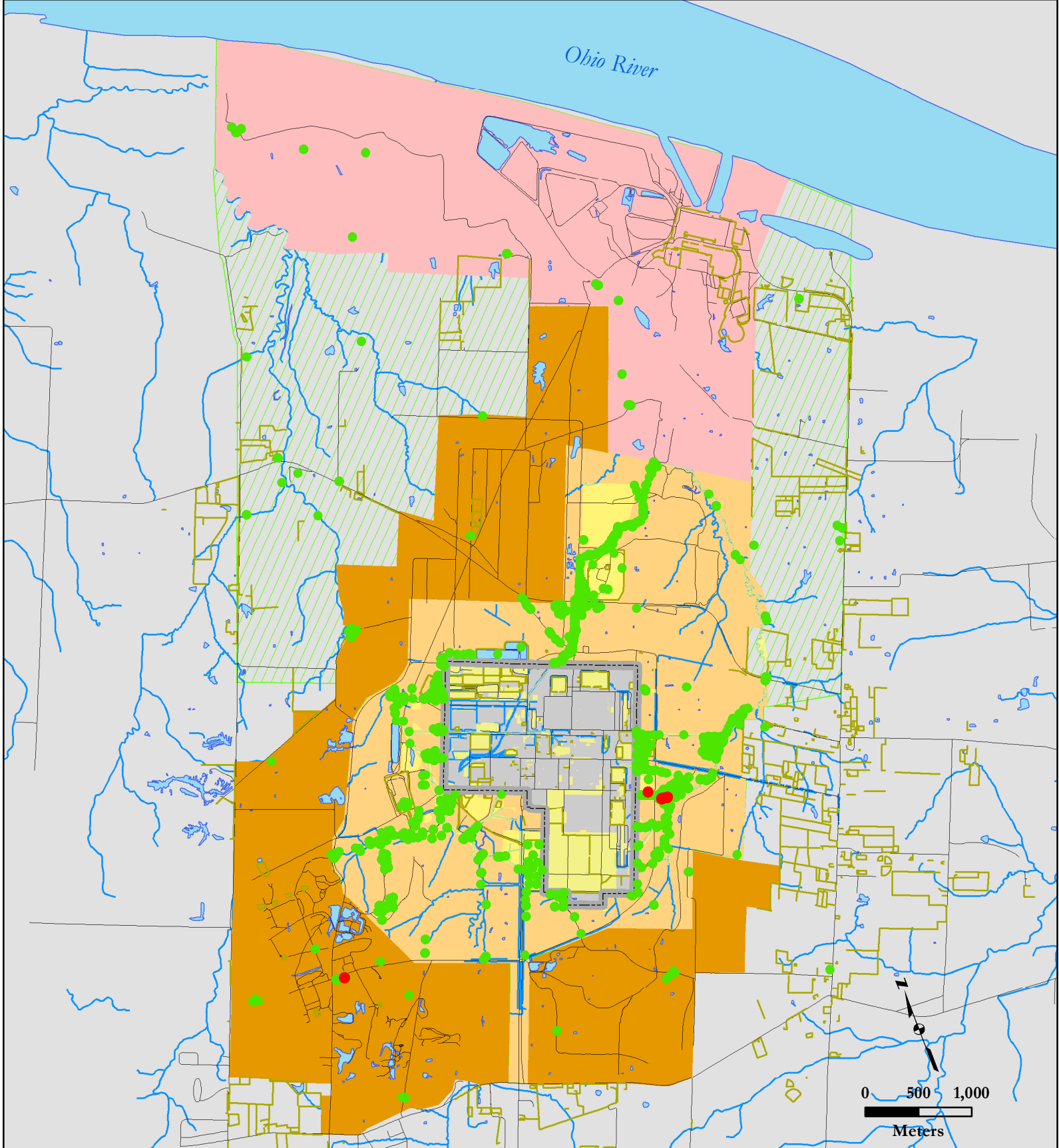
**U-234
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 11 samples above the AL without deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



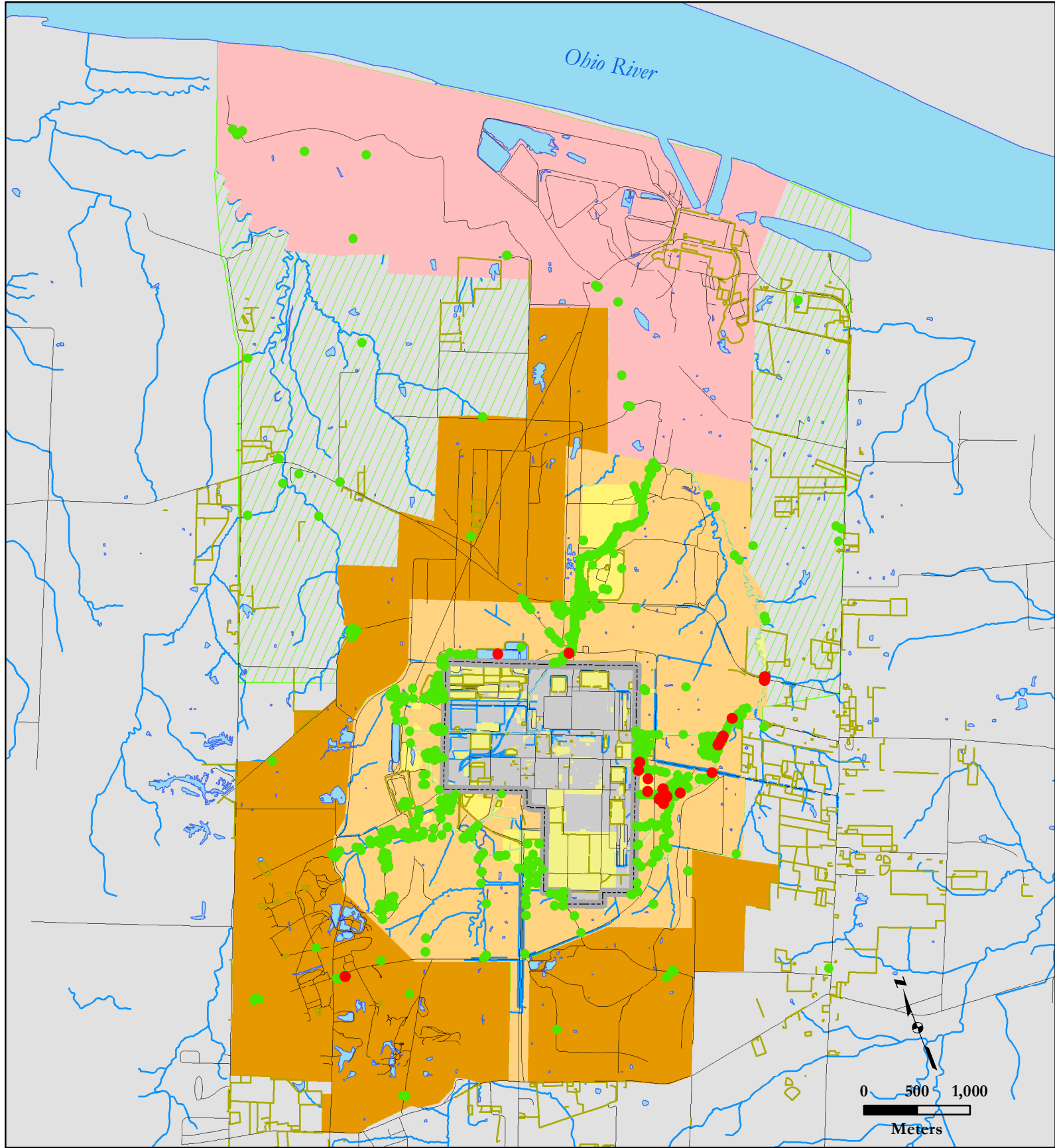
**U-235
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 7 samples above the AL with deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



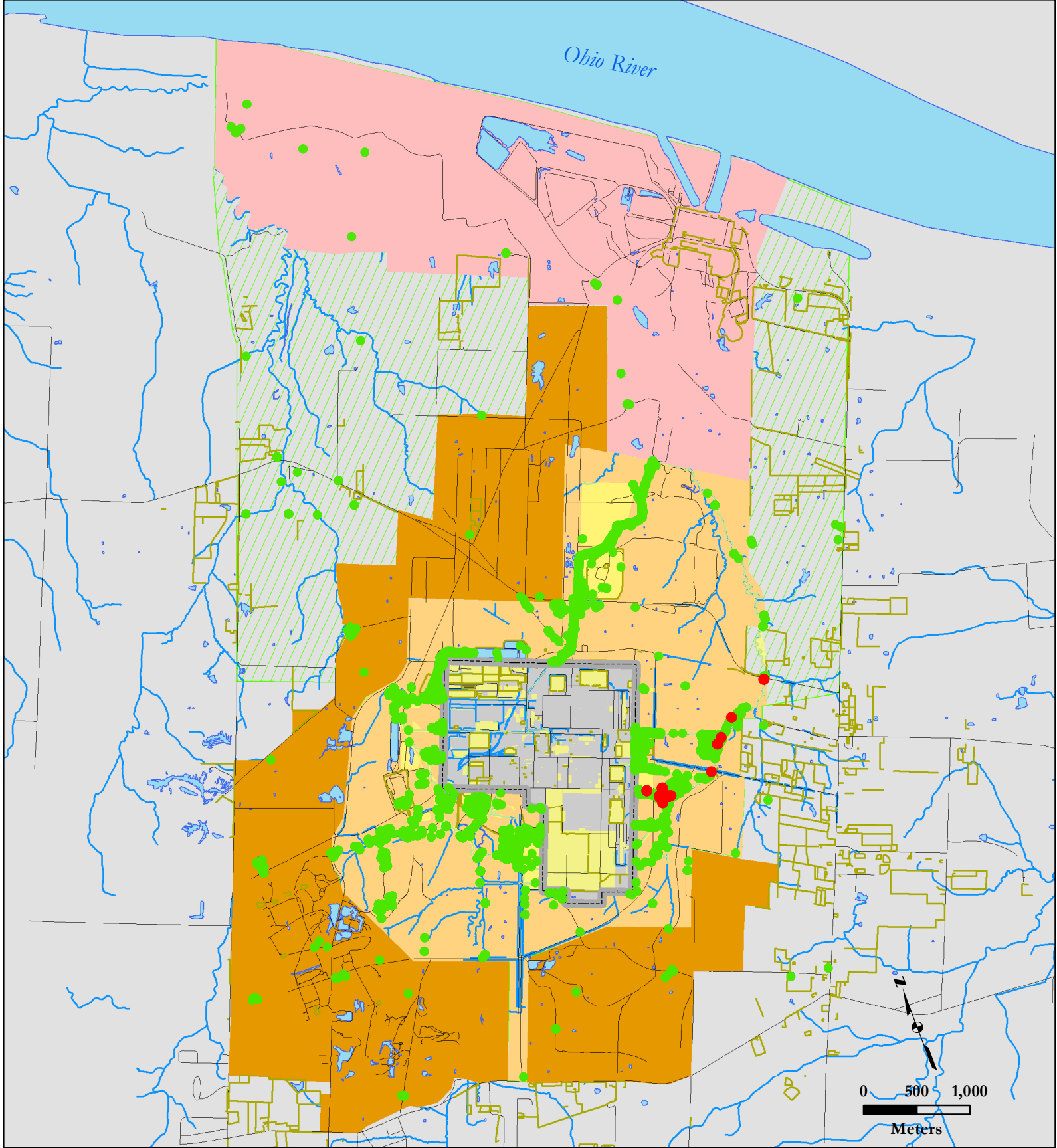
**U-235
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 37 samples above the AL without deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



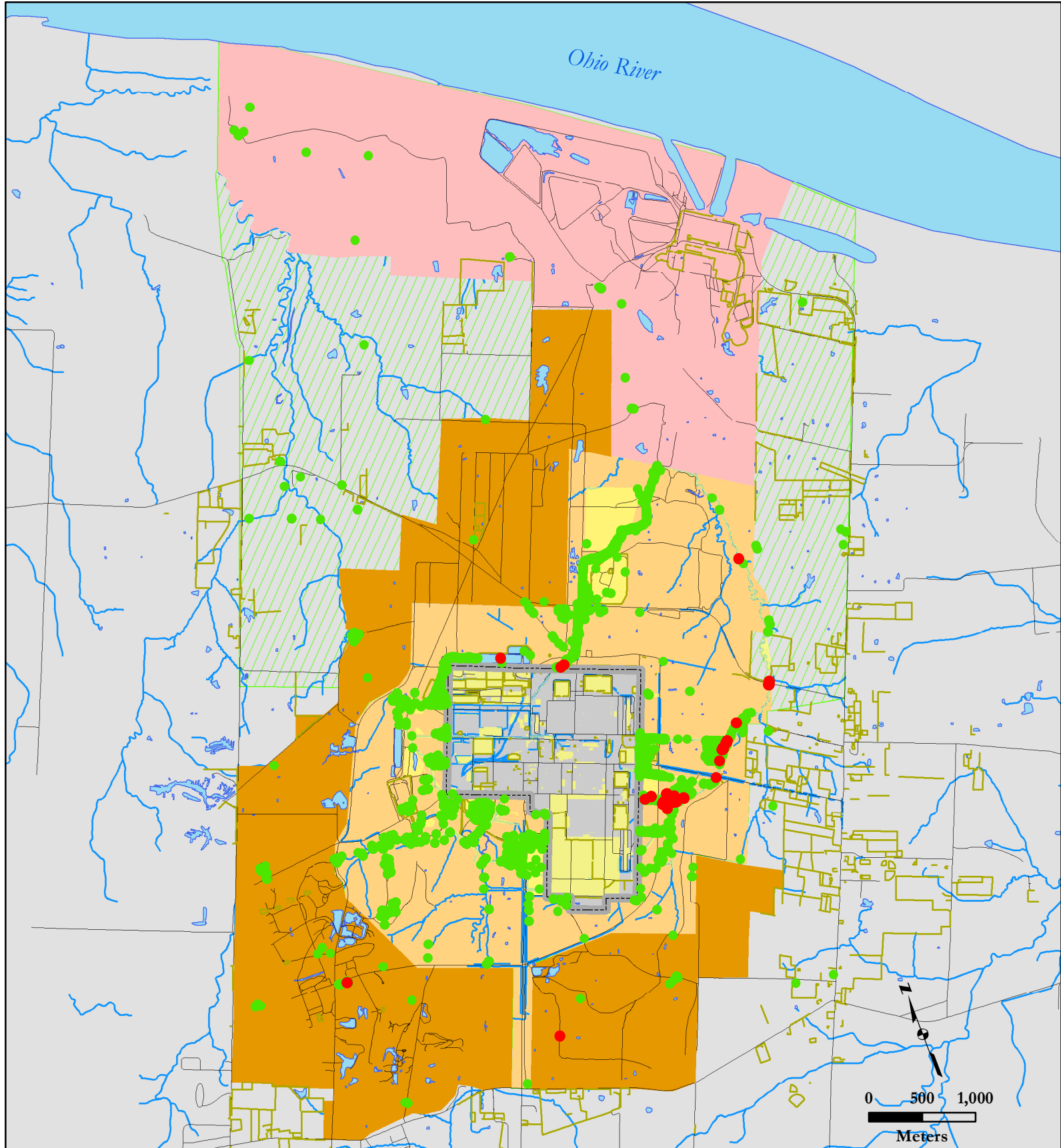
**U-238
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 67 samples above the AL with deed restrictions

Y:\IEAW\Projects\5091



- Sample Locations Above AL
- Sample Locations Below AL
- DOE Property Boundary
- PGDP Limited Area



**U-238
Soil and
Sediment Samples**

Created by: J. Viars

Date: August 1, 2012

Results: 229 samples above the AL without deed restrictions

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*Quality Control (QC) of Oak Ridge
Institute for Science and Education
(ORISE) Dose Modeling Evaluations
for the Authorized Limits Request for
the DOE-Owned Property Outside the
Limited Area, Paducah Gaseous
Diffusion Plant, Paducah, Kentucky,
Using RESRAD*

By

John A. Volpe, Ph.D.

Executive Management Consultant
Performance Results Corporation

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February 18, 2011

Dr. Richard Bonczek
U.S. Department of Energy
Portsmouth/Paducah Project Office
1017 Majestic Drive
Lexington, KY 40513

Subject: Quality Control (QC) of Oak Ridge Institute for Science and Education (ORISE) Dose Modeling Evaluations for the Authorized Limits Request for the DOE-Owned Property Outside the Limited Area, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Using RESRAD

Dear Dr. Bonczek:

RESRAD outputs are provided in Attachment 2, 3, 4, 5, 6, and 7 utilizing input parameters in Attachment 1 provided and used by ORISE for development of single radionuclide soil guidelines. The single radionuclide soil guidelines could be used by DOE to evaluate and establish authorized limits for the release of real property (outside the Limited Area) owned by DOE at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky.

RESRAD outputs in Attachment 2, 3, and 4 are for the following receptors: (1) Resident Farmer, (2) Teen Recreational User, and (3) Wildlife Worker. Single radionuclide soil guidelines for the three receptors were developed at 1, 15, 25, and 100 millirem/year (mrem/yr). The outputs in Attachment 2, 3, and 4 provide single radionuclide soil guidelines for americium-241, neptunium-237, cesium-137, plutonium-238, plutonium-239/240, technetium-99, thorium-228, thorium-230, thorium-232, uranium-234, uranium-235, and uranium-238.

Based on a number of issues discussed the subject report, the list of radionuclides for which single radionuclide soil guidelines was reduced to cesium-137, uranium-234, uranium-235, and uranium-238. RESRAD Resident Farmer outputs for this list of radionuclides are provided in Attachment 5. Single radionuclide soil guidelines for the reduced lists were developed at 1, 15, 25 and 100 mrem/yr.

Attachment 6 contains QC for the assessment of peak dose from the cumulative radionuclide inventory using maximum concentration values based on a target dose constraint of 25 mrem/yr.

Attachment 7 provides the QC for the Sensitivity Analyses for the Resident Farmer scenario with respect to source area and thickness. Uncertainty analysis is also provided in Attachment 7 for the Resident Farmer for the source area and thickness (see sections 5.5.2 Sensitivity Analysis and 5.5.3 Uncertainty (Probabilistic) Analysis).

Utilizing the input parameters provided by ORISE in Attachment 1, RESRAD returned the results provided in the tables and figures in Chapter 5 of the ORISE's Report "*Dose Modeling Evaluations for the Authorized Limits Request for the DOE-Owned Property Outside the Limited Area, Paducah Gaseous Diffusion Plant, Paducah Kentucky*", DCN509-TR-01-1(D2).

If you have question regarding the QC, please contact me at 502-330-0222.

Sincerely,



John A. Volpe, Ph.D.
Executive Management Consultant
Performance Results Corporation

Attachments

C: Tim Ecklelard, PRC

ATTACHMENT 1

RESRAD TABLE OF INPUT PARAMETERS

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
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Source

Radionuclide concentration	pCi/g	100 (Nuclide specific)	Site specific	All	Unit concentration for: Am-241 Cs-137 Np-237 Pu-238 Pu-239 Pu-240 Tc-99 Th-228 Th-230 Th-232 U-234 U-235 U-238	P	2	The radionuclide concentration used is 1 pCi/g for each parent radionuclide listed. The list of radionuclides used was provided to ORISE by DOE. It is assumed the parent radionuclides are not in equilibrium with their radioactive progeny.	DOE Project Communication (July 2010)
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Transport Factors

Distribution coefficients: contaminated zone	cm ³ /g	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (See Attachment I)	P	1	Tables with site-specific distribution coefficients for the parent and progeny radionuclides are available in Attachment I immediately following this table of parameters.	DOE 2003 Table Att. 1, page C3-314, Table C.3.1., page C3-301 DOE Project Communication (March 2010)
Distribution coefficients: unsaturated zones	cm ³ /g	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (See Attachment I)	P	1	Tables with site-specific distribution coefficients for the parent and progeny radionuclides are available in Attachment I immediately following this table of parameters.	DOE 2003 Table Att. 1, page C3-314, Table C.3.1., page C3-301 DOE Project Communication (March 2010)
Distribution coefficients: saturated zones	cm ³ /g	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (See Attachment I)	P	1	Tables with site-specific distribution coefficients for the parent and daughter radionuclides are available in	DOE 2003 Table Att. 1, page C3-314, Table C.3.1.,

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
		available)						Attachment I immediately following this table of parameters.	page C3-301, Table 4.7., page 4-21 DOE Project Communication (March 2010)
Number of unsaturated zones	– ^e	1	0–5 (integer value)	All	1	P	3	The default number of unsaturated zones is used. The unsaturated zone considered is the Upper Continental Recharge System (UCRS).	DOE 2009 Appendix E, page E-243
Time since placement of material	yr	0	0 – 100	All	0	P	3	The default value is used.	Yu et al. 2001
Groundwater concentration	pCi/L	0 ^f (Nuclide specific)	0 – 1E+34	All	0	P	3	The default value is used.	Yu et al. 2001
Leach rate ^g	1/yr	0 (Nuclide specific)	0 – 1E+34	All	0	P	3	The default value is used.	Yu et al. 2001
Solubility limit	mol/L	0 (Nuclide specific)	0 – 1E+34	All	0	P	3	The default value is used.	Yu et al. 2001
Use plant/soil ratio	check box	Yes/No	NA ^h	All	Box checked for all except Np-237	NA	3	The default value is “checked”, but the code will not allow input of site specific distribution coefficients for Np-237 unless the box is unchecked. Confirmed that this approach was appropriate with Dr. Charley Yu, ANL	Project Communication with Dr. Charley Yu (April 2010)

Calculation Parameters

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
Basic radiation dose limit	mrem/yr	25	1E-2 – 1E+4	All	1, 15, 25, and 100	NA	3	Three target dose constraints of 1, 15, 25 mrem/yr and a primary dose limit of 100 mrem/yr are considered in this project. Note that changing the basic radiation dose limit in the code will not change the Dose to Source Ratio (DSR) which is used in the calculation for single radionuclide soil guidelines.	DOE SOW to ORISE for DOE Property Outside the Limited Areas, Section 2, Item 2
Times for calculations	yr	1, 3, 10, 30, 100, 300, 1000	0 – 1E+5	All	1,50, 100, 500, 1,000	P	3	A time horizon of 1,000 years is used in order to calculate ALs.	DOE/CH/8901 DOE Order 5400.5 DOE Project Communication (July 2010)

Contaminated Zone Parameters

Area of contaminated zone	m ²	10,000	1E-4 – 1E+15	All	20,000	P	2	The primary source of contamination is assumed to be the DOE-Owned Property Outside the Limited Area (Property). It is assumed that contamination is spread across this entire Property by surface deposition. The area of 20,000 m ² (2 hectares or 5 acres) is selected since this the minimum size area required in order to have farm as per DOE CH-8901.	DOE/CH/8901
Thickness of contaminated zone	m	2	1E-5 – 1E+3	All	0.15	P	2	The contaminated zone/Property is assumed to be the first 6 inches of the	DOE Project Communication with DOE-PPPO

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								Upper Continental Recharge System or UCRS (assuming the first layer of soil is from the UCRS and that it is the same type of soil across this entire area). This value was provided by DOE, with the assumption the first six inches are contaminated due to surface deposition.	(July 2010)
Length parallel to aquifer flow	m	100	1E-4 – 1E+6	All	141.42	P	2	This is the square root of the area of the contaminated zone.	Yu et al. 2001

Cover and Contaminated Zone Hydrological Data

Cover depth	m	0	0 – 100	All	0	P	2	The default value is used.	Yu et al. 2001
Density of cover material	g/cm ³	1.5	1E-3 – 22.5	All	1.5	P	1	The value is not used by the code since the cover depth is zero.	Yu et al. 2001
Cover erosion rate	m/yr	0.001	0 – 5	All	0.001	P, B	2	This value is not used by the code since the cover depth is zero.	Yu et al. 2001
Density of contaminated zone	g/cm ³	1.5	1E-3 – 22.5	All	1.46	P	1	This value corresponds to the bulk density of the Upper Continental Recharge System (UCRS).	DOE 2009 Appendix E, page E-243
Contaminated zone total porosity	–	0.4	1E-5 – 1	All	0.45	P	2	The porosity of the UCRS is 0.45.	DOE 2009 Appendix E, page E-243
Contaminated zone field capacity	–	0.2	1E-34 – 1	All	0.25	P	3	This value was provided by DOE support geologist.	DOE Project Communication (July 2009)
Contaminated zone erosion rate	m/yr	0.001	0 – 5	All	0	P, B	2	DOE-PPPO recommended that erosion is not considered with the contaminated zone.	DOE Project Communication with DOE-PPPO (July 2010)
Contaminated zone hydraulic conductivity	m/yr	10	1E-3 – 1E+10	All	5.17	P	2	The site-specific hydraulic conductivity corresponds to the likeliest (mean) value of	DOE 2009 Appendix E, Page E-244

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								1.64E-05 cm/sec for the UCRS (5.17 m/yr).	
Contaminated zone parameter	–	5.3	0 – 15	All	5.3	P	2	The default value is used.	Yu et al. 2001
Evapotranspiration coefficient	–	0.5	0 – 0.999	All	0.97	P	2	The value was calculated using information from the Kentucky Climate Center provided by DOE consultant. The equation used to calculate these values is available in Yu et al. 1993. The calculations are available in Attachment II following this table.	DOE Project Communication with DOE consultant (December 2010) Yu et al. 1993 page 78
Wind speed	m/s	2	1E-4 – 20	All	4.5	P	2	The average prevailing wind is from the south to southwest at approximately 10 mph (4.5 meter/sec).	PRS 2008a page 1-4
Precipitation rate	m/yr	1	0 – 10	All	1.24	P	2	The yearly precipitation averages about 49 inches (1.24 meters).	PRS 2008a page 1-4
Irrigation rate	m/yr	0.2	0 – 10	All	0	B	3	The irrigation rate was set to 0 m/yr since irrigation in the Paducah, KY area is highly unlikely. In the event irrigation is needed in this region for farming or gardening, uncontaminated surface water will be the primary source and not groundwater.	DOE Project Communication with DOE-PPPO (September 2010) Kenny et al. 2009
Irrigation mode	–	Overhead	Overhead/ditch	All	Overhead	B	3	The default input is used.	Yu et al. 2001
Runoff coefficient	–	0.2	0 – 1	All	0.31		2	The value was calculated using information from PRS-2008b provided by DOE consultant. The equation used to	DOE Project Communication with DOE consultant (December 2010)

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								calculate these values is available in Yu et al. 1993. The calculations are available in Attachment II following this table.	PRS 2008b Table 4.10, page 4-26 Yu et al. 1993 page 73
Watershed area for nearby stream or pond	m ²	1,000,000	1E-4 – 1E+34	All	1,000,000		3	This parameter refers to the site-specific area that drains into the nearby pond. The default value is assumed.	Yu et al. 2001
Accuracy for water soil computation	–	0.001	0 – 0.1	All	0.001	NA	3	This parameter refers to the fractional accuracy desired (convergence criterion) in the Romberg integration used to obtain water/soil concentration ratios. The default value is assumed.	Yu et al. 2001

Saturated Zone Hydrological Data

Density of saturated zone	g/cm ³	1.5	1E-3 – 22.5	All	1.67	P	1	The saturated zone is the Regional Gravel Aquifer (RGA). The bulk density of the RGA is 1,670 kg/m ³ .	DOE 2009 Appendix E, page E-246
Saturated zone total porosity	–	0.4	1E-5 – 1	All	0.34	P	1	This value was obtained from DOE 2003.	DOE 2003 Table Att.4., page C3-315
Saturated zone effective porosity	–	0.2	1E-34 – 1	All	0.3	P	1	This value was obtained from DOE 2003.	DOE 2003 Table 4.7, page 4-21, Table Att.4., page C3-315
Saturated zone field capacity	–	0.2	1E-34 – 1	All	0.04	P	3	This value was obtained from DOE 2003.	DOE 2003 Table Att.4., page C3-315
Saturated zone hydraulic conductivity	m/yr	100	1E-3 – 1E+10	All	38938	P	1	The value of 350 ft/day is recommended in DOE 2009.	DOE 2009 Appendix E, page E-247
Saturated zone hydraulic gradient	–	0.02	1E-10 – 10	All	0.00101	P	2	This is the likeliest value obtained from DOE 2009.	DOE 2009 Appendix E,

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
									Table F.2.8, page E-263
Saturated zone b parameter	–	5.3	1E-34 – 15	All	4.05	P	2	DOE geologist determined that saturated zone consists of a mixture of gravel and sand and recommended a value from Yu et al. 1993 based on sand.	Yu et al. 1993 DOE Project Communication with geologist (April 2010)
Water table drop rate	m/yr	0.001	0 – 5	All	0.001	P	3	The default value is used. No site-specific value was available.	Yu et al. 2001
Well pump intake depth (below water table)	m	10	1E-5 – 1,000	All	10	P	2	The default value is used.	Yu et al. 2001
Model: nondispersion (ND) or mass-balance (MB)	–	ND	ND/MB	All	ND	P	3	The default model is used.	Yu et al. 2001
Well pumping rate	m ³ /yr	250	0 – 1E+10	All	250	B, P	2	The default value is assumed for the Resident Farmer, since it is reflected in the pathways for this receptor and site specific information is not available. The meat, milk, plant and drinking water ingestion pathways are suppressed for the Worker and Recreational User since these pathways are not considered for these receptors.	Yu et al. 2001

Uncontaminated Unsaturated Zone Parameters

Unsaturated zone thickness	m	4	0 – 10,000	All	12.2	P	1	DOE-PPPO recommended a value of 40 ft as the thickness of the unsaturated zone.	DOE Project Communication with PPPO (August 2010)
Unsaturated zone	g/cm ³	1.5	1E-3 – 22.5	All	1.46	P	2	This value corresponds to the	DOE 2009

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
density								bulk density of the Upper Continental Recharge System (UCRS).	Appendix E, page E-243
Unsaturated zone total porosity	–	0.4	1E-5 – 1	All	0.45	P	2	The porosity of the UCRS is 0.45.	DOE 2009 Appendix E, page E-243
Unsaturated zone effective porosity	–	0.2	1E-34 – 1	All	0.2	P	2	The default value is used.	Yu et al. 2001
Unsaturated zone field capacity	–	0.2	1E-34 – 1	All	0.2	P	3	This value was confirmed to be appropriate by Al Laase, a Paducah site expert modeler.	DOE Project Communication with PPPO (December 2010) Yu et al. 2001
Unsaturated zone, soil-specific b parameter	–	5.3	0 – 15	All	5.3	P	2	The default value is used.	Yu et al. 2001
Unsaturated zone hydraulic conductivity	m/yr	10	1E-3 – 1E+10	All	5.17	P	2	The site-specific hydraulic conductivity corresponds to the likeliest (mean) value of 1.64E-05 cm/sec for the UCRS (5.17 m/yr).	DOE 2009 Appendix E, Page E-244

Occupancy, Inhalation, and External Gamma Parameters

Inhalation rate	m ³ /yr	8,400	0 – 20,000	RF	7,297	M, B	3	The inhalation rate for the Resident Farmer was converted from a value available in DOE 2009. For the conversion 365 d/yr was used because this is what RESRAD considers. DOE 2009 has an inhalation	King et al. 2006 Page 178 DOE 2009 Appendix D, Table D.7, page D-17, Table D.38, page D-48, Table D.17,
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RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
				W RU	20,000			rate of 2.5m ³ /hr (21,900 m ³ /yr) for the Worker and the Recreational User. The maximum value allowed by RESRAD is 20,000 m ³ /yr, thus this value was used. See Attachment II following this table of parameters.	page D-27
Mass loading for inhalation	g/m ³	1.00E-04	0 – 2	RF RU	1.08E-06	P, B	2	The following equation was used to calculate the Mass Loading for Inhalation or Air-to-Soil concentration ratio (ASR): ASR = 1/ PEF; PEF is the particulate emission factor.	King et al. 2006 Page 178 DOE 2009 Appendix D, Table D.7 , page D-17, Table D.38, page D-48, and Table D.17, page D-27
				W	1.61E-06			The PEF values used to calculate the mass loading for inhalation are available in DOE 2009. The PEF values were converted into RESRAD compatible units. See Attachment II following this table of parameters	
Exposure duration	yr	30	1 – 1,000	RF	24	B	3	The exposure duration is the span of time, in years, during which an individual is expected to spend time on the site. This value is used in calculating lifetime cancer risk from exposure to radionuclide contamination. It is also used to calculate time-integrated dose if the exposure duration is less than a year.	DOE 2009 Appendix D, Table D.8, page D-18, Table D.38, page D- 41, and Table D.17, page D- 27

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
				W	25			<p>These values were obtained from DOE 2009. The exposure duration is available in the tables of Appendix D.</p> <p>For the Resident Farmer the adult value for "Rural Resident" is used.</p> <p>For the Worker the value for "Industrial Worker or Excavation Worker" is used since these values are equivalent.</p> <p>For the Recreational User the value for the "Recreational User (Teen)" is used.</p> <p>See Attachment II following this table of parameters.</p>	
				RU	12				
Indoor dust filtration factor	–	0.4	0–1	All	0.4	P, B	2	<p>The default value is used. Indoor time fraction is the driver for application of this parameter. In instances where there is no indoor occupancy, this parameter will not be applied.</p>	Yu et al. 2001
External gamma shielding factor	–	0.7	0–1	RF W	0.8	P	2	<p>The external gamma shielding factors are available for the Resident Farmer, Worker, and Recreational User in DOE 2009. The value is 0.2 for all these receptors except for the Recreational User which is 0. The RESRAD input values correspond to 0.8 and 1. The shielding factor of 0.8 implies that the indoor levels of external radiation are 20% lower than the outdoor levels.</p>	DOE 2009 Appendix D, Table D.8, page D-18, Table D.18, page D-28, and Table D.40, page D-50
				RU	1				

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								A shielding factor of 1 implies that there is no shielding. See Attachment II following this table of parameters.	
Indoor time fraction	-	0.5	0-1	RF	0.64	B	3	This parameter is the average fraction of time during which an individual stays indoors. The Resident Farmer is inside 16 hours per day, 350 days per year which results in an indoor fraction of 64%. The Worker and Recreational User will spend all of their time outdoors. See Attachment II following this table of parameters.	DOE 2009 Appendix D, Table D.8, page D-18
				W RU	0				
Outdoor time fraction	-	0.25	0-1	RF	0.32	B	3	This parameter is the average fraction of time during which an individual stays outdoors on the site. The Resident Farmer is outside 8 hours per day, 350 days per year which results in an outdoor fraction of 32%. It is assumed the Worker is a Wildlife Worker, thus the outdoor time fraction for an outdoor worker (185 days/yr) from DOE 2009 is used. It is also assumed that this individual works outside 8 hrs/day, 185 days/yr.	DOE 2009 Appendix D, Table D.8, page D-18, Table D.18, page D-28, and Table D.40, page D-50
				W	0.17				

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
				RU	0.08			The Recreational User is considered to be a teenager who will spend 5 hrs/day, 140 days/yr on the contaminated site. See Attachment II following this table of parameters.	
Shape of the contaminated zone (shape factor flag)	–	Circular	Circular/ non-circular	All	Circular	P	3	It is assumed that the receptor is located in the middle of the contaminated zone. Therefore, the circular shape was assumed instead of the noncircular shape. By default, the receptor is assumed to be placed in the middle of a circularly shaped contaminated zone.	Yu et al. 2001

Ingestion Pathway, Dietary Data

Fruit, vegetable, and grain consumption	kg/yr	160	0 – 1,000	All	231.7	M, B	2	The value was converted from Table D.9 in DOE 2009, which is for home grown vegetables. It does not specify fruit, and grain, thus for RESRAD a ratio was obtained to assign a value for fruit, vegetable and grain consumption and a value for leafy vegetable consumption. The calculation is included in Attachment II. This parameter applies to the Resident Farmer since the ingestion pathway for plants/home-grown produce is applicable for this receptor. The plant ingestion pathway is	DOE 2009 Appendix D, Table D.9, page D-19
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RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								suppressed for the Worker and Recreational User.	
Leafy vegetable consumption	kg/yr	14	0 – 100	All	20.3	M, B	3	<p>The value was converted from Table D.9 in DOE 2009, which is for home grown vegetables. It does not specify fruit, and grain, thus for RESRAD a ratio was obtained to assign a value for fruit, vegetable and grain consumption and a value for leafy vegetable consumption.</p> <p>The calculation is included in Attachment II.</p> <p>This parameter applies to the Resident Farmer since the ingestion pathway for plants/home-grown produce is applicable for this receptor.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	DOE 2009 Appendix D, Table D.9, page D-19
Milk consumption	L/yr	92	0 – 1,000	All	425	M, B	2	<p>This value was converted from Table D.11 in DOE 2009. The density of whole milk, 1030 kg/cubic meter, was used to convert the value into L/yr.</p> <p>This parameter is applicable for the Resident Farmer.</p> <p>This parameter is not applicable for the Worker and Recreational User; therefore, the milk ingestion pathway is suppressed.</p> <p>See Attachment II following this table of parameters.</p>	DOE 2009 Appendix D, Table D.11, page D-21

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
Meat and poultry consumption	kg/yr	63	0 – 300	All	154	M, B	3	<p>This value was converted from Table D.10, D.12, and D.13 in DOE 2009. The value is the sum of the values obtained for beef, pork and poultry, since they are in separate tables. The value for eggs is available, but eggs are not considered poultry.</p> <p>This parameter is applicable for the Resident Farmer.</p> <p>This parameter is not applicable for the Workers and Recreational User; therefore, the meat ingestion pathway is suppressed.</p> <p>See Attachment II following this table of parameters.</p>	DOE 2009 Appendix D, Table D.10, D.12, and D.13, pages D-20, D-22, and D-23
Fish consumption	kg/yr	5.4	0 – 1,000	All	5.4	M, B	3	The aquatic foods ingestion pathway is suppressed in RESRAD for all receptors.	Yu et al. 2001
Other seafood consumption	kg/yr	0.9	0 – 100	All	0.9	M, B	3	The aquatic foods ingestion pathway is suppressed in RESRAD for all receptors.	Yu et al. 2001
Soil ingestion rate	g/yr	36.5	0 – 10,000	All	36.5	M, B	2	<p>This value was converted from Table D.5 in DOE 2009.</p> <p>Reference DOE 2009 assumes a lower ingestion rate for an Industrial Worker. However, the Wildlife Worker tends to crops and is assumed to have a soil ingestion rate similar to the Resident Farmer.</p> <p>For the Recreational User, the value available in Table D.15 in DOE 2009 is for ingestion of</p>	DOE 2009 Appendix D, Table D.5, page D-15, and Table D.15, page D-25

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								sediment. This value was assumed for the soil ingestion rate. See Attachment II following this table of parameters.	
Drinking water intake	L/yr	510	0 – 10,000	All	700	M, B	2	This value was converted from Table D.1 in DOE 2009; however, the drinking water pathway is suppressed for all receptors. See Attachment II following this table of parameters.	DOE 2009 Appendix D, Table D.1, page D-11
Drinking water contaminated fraction	–	1	0 – 1	All	1	B, P	3	This parameter allows specification of the fraction of contaminated intake for the drinking water pathway. The remaining balance (if value <1) of the drinking water is from off-site sources, which are assumed to be uncontaminated. The default value of 1 is assumed for the Resident Farmer. This parameter is not applicable for the Worker or the Recreational User; therefore, the drinking water ingestion pathway is suppressed.	Yu et al. 2001
Household water contaminated fraction	–	1	0 – 1	All	1	B, P	3	The default value of 1 is assumed. However, this parameter is related to the Radon pathway and this pathway is suppressed for all the receptors.	Yu et al. 2001
Livestock water	–	1	0 – 1	All	1	B, P	3	The default value of 1 is	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
contaminated fraction								<p>assumed for the Resident Farmer. This default value of 1 indicates that all livestock water is from an on-site source.</p> <p>This parameter is not applicable for the Worker or the Recreational User; therefore, the meat and milk ingestion pathways are suppressed.</p>	
Irrigation water contaminated fraction	–	1	0 – 1	All	0	B, P	3	<p>A value of “0” is used for the Resident Farmer since this receptor will use an off-site water source that is uncontaminated.</p> <p>This parameter is not applicable for the other receptors. The plant ingestion pathway is suppressed for the Worker, and the Recreational User.</p>	<p>DOE Project Communication with DOE-PPPO (September 2010)</p> <p>Kenny et al. 2009</p>
Aquatic food contaminated fraction	–	0.5	0 – 1	All	0.5	B, P	2	<p>A value of 0.5 indicates that 50% of aquatic food is being obtained from on-site sources.</p> <p>This parameter is suppressed by turning off the aquatic food pathway for all receptors.</p>	Yu et al. 2001
Plant food contaminated fraction	–	-1	0 to 1 or -1	All	-1	B, P	3	<p>The default value of -1 specifies that the contaminated fraction of plant food is calculated from the appropriate area factor in the code (see page A-8 of Yu et al. 2001).</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								The plant ingestion pathway is suppressed for the Worker and Recreational User.	
Meat contaminated fraction	–	-1	0 to 1 or –1	All	-1	B, P	3	A default value of -1 was assumed for the Resident Farmer. The default value of -1 specifies that the contaminated fraction of meat is calculated from the appropriate area factor in the code. The meat ingestion pathway is suppressed for the Worker and Recreational User.	Yu et al. 2001
Milk contaminated fraction	–	-1	0 to 1 or –1	All	-1	B, P	3	The default value of -1 specifies that the contaminated fraction of milk is calculated from the appropriate area factor in the code. The milk ingestion pathway is suppressed for the Worker and Recreational User.	Yu et al. 2001

Ingestion Pathway, Nondietary Data

Livestock fodder intake for meat	kg/d	68	0 – 300	All	25	M	3	This parameter is for the daily intake of fodder by livestock kept for meat consumption. The code uses the area factor to calculate the contaminated intake. The meat ingestion pathway is suppressed for the Worker and Recreational User.	DOE 2009 Appendix D, Table D.46, page D-56
Livestock fodder intake for milk	kg/d	55	0 – 300	All	25	M	3	This parameter is for the daily intake of fodder by livestock kept for milk consumption.	DOE 2009 Appendix D, Table D.47,

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								<p>The code uses the area factor to calculate the contaminated intake.</p> <p>The milk ingestion pathway is suppressed for the Worker and Recreational User.</p>	page D-57
Livestock water intake for meat	L/d	50	0 – 500	All	50	M	3	<p>This parameter is for the daily intake of water by livestock kept for meat consumption. The code uses the area factor to calculate the contaminated intake.</p> <p>The meat ingestion pathway is suppressed for the Worker and Recreational User.</p>	DOE 2009 Appendix D, Table D.46, page D-56
Livestock water intake for milk	L/d	160	0 – 500	All	160	M	3	<p>The default value is used for the Resident Farmer.</p> <p>The milk ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Livestock intake of soil	kg/d	0.5	0 – 10	All	1	M	3	<p>This parameter reflects the daily intake of soil by livestock kept for meat or milk consumption.</p> <p>DOE 2009 has separate tables for livestock soil ingestion. A value of 1kg/d is listed for beef and dairy in each table, thus for the Resident Farmer, this value will be used.</p> <p>The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	DOE 2009 Appendix D, Tables D.46 and D.47, pages D-56 and D-57
Mass loading for foliar deposition	g/m ³	1.00E-04	0 – 1	All	1.00E-04	P	3	The average mass loading of airborne contaminated soil	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								<p>particles in a garden during the growing season.</p> <p>The default value is assumed for the Resident Farmer since plant ingestion is a pathway for these receptors and site specific information is not available.</p> <p>The plant, meat and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	
Depth of soil mixing layer	m	0.15	0 – 1	All	0.15	P	2	<p>Used in calculating the depth factor for dust inhalation and soil ingestion pathways and for foliar deposition for the plant, meat, and milk ingestion pathways. The depth factor is the fraction of the resuspendable soil particles at the ground surface that are contaminated. It is calculated by assuming that mixing of soil will occur in the soil mixing layer.</p> <p>The default value is assumed and is applied to all receptors since the inhalation and soil ingestion pathways apply to all receptors and site specific information is not available.</p> <p>The plant, meat, and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Depth of roots	m	0.9	0 – 100	All	0.9	P	1	<p>The default value is assumed for the Resident Farmer since</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								meat, milk, and plant ingestion are active pathways for this receptor and site specific information is not available. The plant, meat, and milk ingestion are suppressed for the Worker and Recreational User.	
Groundwater fractional usage for drinking water	–	1	0–1	All	1	B, P	3	A value of 1 specifies 100% groundwater usage and 0 selects 100% surface water usage. The default value is used. The drinking water pathway is suppressed for the Worker and Recreational User.	Yu et al. 2001
Groundwater fractional usage for household water	–	1	0–1	All	1	B, P	3	A value of 1 specifies 100% groundwater usage and 0 selects 100% surface water usage. The default value is used. The radon pathway is suppressed for all receptors since this pathway is not considered in the conceptual site model.	Yu et al. 2001
Groundwater fractional usage for livestock water	–	1	0–1	All	1	B, P	3	A value of 1 specifies 100% groundwater usage and 0 selects 100% surface water usage. The default value is used. The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.	Yu et al. 2001
Groundwater	–	1	0–1	All	0	B, P	3	The four groundwater	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
fractional usage for irrigation water								<p>fractional usage parameters (drinking water, household water, livestock water, and irrigation water) are included primarily for all groundwater (well or spring) and surface water (pond or river) scenarios. Hence, the fractions will usually be set at 1 or 0. A value of 1 specifies 100% groundwater usage and 0 specifies 100% surface water usage.</p> <p>A value of 0 is used for the Resident Farmer, because the site conceptual model assumes this individual will obtain uncontaminated irrigation water from off site.</p> <p>The plant ingestion pathway is suppressed for the Worker, and Recreational User since this pathway is not considered in the conceptual site model for these receptors.</p>	<p>DOE Project Communication with DOE-PPPO (September 2010)</p> <p>Kenny et al. 2009</p>

Plant Factors

Wet-weight crop yields for non-leafy vegetables	kg/m ²	0.7	0.01 – 3	All	0.7	P	2	The weight of the edible portion of plant food produced per unit land area for different food classes. The code has wet-weight crop yield for non-leafy, leafy, and fodder. Non-leafy and leafy vegetables are for human consumption; fodder is for animal consumption.	Yu et al. 2001
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RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								<p>The default value is assumed for the Resident Farmer since the plant ingestion pathway is applicable and site specific information is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	
Wet-weight crop yields for leafy vegetables	kg/m ²	1.5	0.01 – 3	All	1.5	P	3	<p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and site specific information is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Wet-weight crop yields for fodder	kg/m ²	1.1	0.01 – 3	All	1.1	P	3	<p>The default value is used for the Resident Farmer since meat and milk ingestion is applicable and a site specific value is not available.</p> <p>The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Length of growing season for non-leafy vegetables	yr	0.17	0.01 – 1	All	0.17	P	3	<p>The exposure time to contamination for the plant food during the growing season. The contamination can reach the edible portion of the plant food through foliar deposition, root uptake, and water irrigation.</p> <p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								value is not available. The plant ingestion pathway is suppressed for the Worker and Recreational User.	
Length of growing season for leafy vegetables	yr	0.25	0.01 – 1	All	0.25	P	3	The exposure time to contamination for the plant food during the growing season. The contamination can reach the edible portion of the plant food through foliar deposition, root uptake, and water irrigation. The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available. The plant ingestion pathway is suppressed for the Worker and Recreational User.	Yu et al. 2001
Length of growing season for fodder	yr	0.08	0.01 – 1	All	0.08	P	3	The exposure time to contamination for the plant food during the growing season. The contamination can reach the edible portion of the plant food through foliar deposition, root uptake, and water irrigation. The default value is assumed for the Resident Farmer because meat and milk ingestion pathways are applicable and a site specific value is not available. The meat and milk ingestion pathways are suppressed for the Worker and Recreational	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								User.	
Translocation factor for non-leafy vegetables	–	0.1	0–1	All	0.1	P	3	<p>The fraction of the contamination that is retained on the foliage that is transferred to the edible portion of the plant.</p> <p>The default value is used for the Resident Farmer since plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Translocation factor for leafy vegetables	–	1	0–1	All	1	P	3	<p>The fraction of the contamination that is retained on the foliage that is transferred to the edible portion of the plant.</p> <p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Translocation factor for fodder	–	1	0–1	All	1	P	3	<p>The fraction of the contamination that is retained on the foliage that is transferred to the edible portion of the plant.</p> <p>The default value is used for the Resident Farmer because meat and milk ingestion pathways are applicable and a site specific value is not available.</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.	
Weathering removal constant	1/yr	20	1 – 40	All	20	P	2	<p>The weathering process would remove contaminants from foliage of the plant food. The process is characterized by a removal constant and reduces the amount of contaminants on foliage exponentially during the exposure period.</p> <p>The default value is used for the Resident Farmer since plant, meat and milk ingestion pathways are applicable and a site specific value is not available.</p> <p>The plant, meat and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Wet foliar interception fraction for non-leafy vegetables	–	0.25	0 – 1	All	0.25	P	3	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant food. Both dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p> <p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								and Recreational User.	
Wet foliar interception fraction for leafy vegetables	–	0.25	0 – 1	All	0.25	P	2	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant food. Both dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p> <p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Wet foliar interception fraction for fodder	–	0.25	0 – 1	All	0.25	P	3	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant food. Both dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p> <p>The default value is used for the Resident Farmer because meat and milk ingestion pathways are applicable and a site specific value is not available.</p> <p>The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Dry foliar interception fraction for non-	–	0.25	0 – 1	All	0.25	P	3	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
leafy vegetables								<p>food. Both the dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p> <p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available. The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	
Dry foliar interception fraction for leafy vegetables	–	0.25	0 – 1	All	0.25	P	3	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant food. Both the dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p> <p>The default value is used for the Resident Farmer since the plant ingestion pathway is applicable and a site specific value is not available. The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Dry foliar interception fraction for fodder	–	0.25	0 – 1	All	0.25	P	3	<p>The fraction of deposited radionuclides that is retained on the foliage of the plant food. Both the dry deposition (from airborne particulates) and the wet deposition processes (from irrigation) are considered.</p> <p>A default value is used for the</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								<p>Resident Farmer because meat and milk ingestion pathways are applicable and a site specific value is not available.</p> <p>The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	

Storage Times before Use Data

Storage times for fruits, non-leafy vegetables, and grain	d	14	0 – 1E+34	All	14	B	3	<p>The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage.</p> <p>The default value is used for the Resident Farmer since plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Storage times for leafy vegetables	d	1	0 – 1E+34	All	1	B	3	<p>The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage.</p> <p>The default value is used for the Resident Farmer since plant ingestion pathway is applicable and a site specific value is not available.</p> <p>The plant ingestion pathway is</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								suppressed for the Worker and Recreational User.	
Storage times for milk	d	1	0 – 1E+34	All	1	B	3	<p>The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage.</p> <p>The default value is used for the Resident Farmer since milk ingestion pathway is applicable and a site specific value is not available.</p> <p>The milk ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Storage times for meat	d	20	0 – 1E+34	All	20	B	3	<p>The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage.</p> <p>The default value is used for the Resident Farmer since meat ingestion is applicable and a site specific value is not available.</p> <p>The meat ingestion pathway is suppressed for the Worker and Recreational User.</p>	Yu et al. 2001
Storage times for fish	d	7	0 – 1E+34	All	7	B	3	<p>The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage.</p> <p>The default value is used; however, the aquatic foods ingestion pathway is suppressed for all receptors</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								since this pathway is not considered in the conceptual site model.	
Storage times for crustacea and mollusks	d	7	0 – 1E+34	All	7	B	3	The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage. The default value is used; however, the aquatic foods ingestion pathway is suppressed for all receptors since this pathway is not considered in the conceptual site model.	Yu et al. 2001
Storage times for well water	d	1	0 – 1E+34	All	1	B	3	The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage. The default value is used for the Resident Farmer since plant, meat, milk ingestion and drinking water pathways are applicable and a site specific value is not available. The plant, meat, milk ingestion and drinking water pathways are suppressed for the Worker and Recreational User since these pathways are not considered in the conceptual site model.	Yu et al. 2001
Storage times for surface water	d	1	0 – 1E+34	All	1	B	3	The storage times are used to calculate radioactive ingrowth and decay adjustment factors for food and feed due to storage.	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
								<p>The default value is used for the Resident Farmer since plant, meat, milk ingestion and drinking water pathways are applicable and a site specific value is not available.</p> <p>The plant, meat, milk ingestion and drinking water pathways are suppressed for the Worker and Recreational User since these pathways are not considered in the conceptual site model.</p>	
Storage times for livestock fodder	d	45	0 – 1E+34	All	45	B	3	<p>For livestock fodder the storage time is an annual average. The default value is obtained by assuming 6 months of outside gazing and 6 months of silage fodder with an average silo time of 3 months.</p> <p>The default value is used for the Resident Farmer because the meat and milk ingestion pathways are applicable and a site specific value is not available.</p> <p>The meat and milk ingestion pathways are suppressed for the Worker and Recreational User.</p>	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
Inhalation dose conversion factors	mrem/pCi	Nuclide Specific (Default values available)	Nuclide Specific	RF W	Nuclide Specific (ICRP-72 (Adult))	M	3	The ICRP -72 Adult and Age 15 libraries are selected to obtain results in Total Effective Dose (TED) in order to comply with changes made to 10 CFR 835 effective on July 9 th , 2010.	Yu et al. 2001
				RU	Nuclide Specific (ICRP-72 (Age 15))				
Ingestion dose conversion factors	mrem/pCi	Nuclide Specific (Default values available)	Nuclide Specific	RF W	Nuclide Specific (ICRP-72 (Adult))	M	3	The ICRP -72 Adult and Age 15 libraries are selected to obtain results in Total Effective Dose (TED) in order to comply with changes made to 10 CFR 835 effective on July 9 th , 2010.	Yu et al. 2001
				RU	Nuclide Specific (ICRP-72 (Age 15))				
Slope factor - external	(risk/yr)/ (pCi/g)	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (Default values)	M	3	Nuclide specific default values are used.	Yu et al. 2001
Slope factor - inhalation	risk/pCi	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (Default values)	M	3	Nuclide specific default values are used.	Yu et al. 2001
Slope factor - ingestion	risk/pCi	Nuclide Specific (Default values available)	Nuclide Specific	All	Nuclide Specific (Default values)	M	3	Nuclide specific default values are used.	Yu et al. 2001
Plant transfer	–	Element	Element	All	Nuclide Specific (Default values)	P	1	Nuclide specific default values	Yu et al. 2001

RESRAD Table of Input Parameters for the DOE-Owned Property Outside the Limited Area

Input Screen Title and Parameter Name	Unit	Code Default Value	Code-Accepted Values^a	Receptor^b	Deterministic Value	Type^c	Priority^d	Justification	References
factor		Specific (Default values available)	Specific					are used.	
Meat transfer factor	(pCi/kg)/ (pCi/d)	Element Specific (Default values available)	Element Specific	All	Nuclide Specific (Default values)	P	2	Nuclide specific default values are used.	Yu et al. 2001
Milk transfer factor	(pCi/L)/ (pCi/d)	Element Specific (Default values available)	Element Specific	All	Nuclide Specific (Default values)	P	2	Nuclide specific default values are used.	Yu et al. 2001
Bioaccumulation factor for fish	(pCi/kg)/ (pCi/L)	Element Specific (Default values available)	Element Specific	All	Nuclide Specific (Default values)	P	2	Nuclide specific default values are used.	Yu et al. 2001
Bioaccumulation factor for crustacea and mollusks	(pCi/kg)/ (pCi/L)	Element Specific (Default values available)	Element Specific	All	Nuclide Specific (Default values)	P	3	Nuclide specific default values are used.	Yu et al. 2001

- a RESRAD does not provide code-accepted values for element- or nuclide-specific parameters.
- b The receptors considered for the selection of parameters are the Resident Farmer (RF), Wildlife Worker (W), and Recreational User (RU)
- c P = physical, B = behavioral, M = metabolic; when more than one type is listed, the first is primary and the next is secondary. The RESRAD parameters that are not classified, because of their function in the code are considered as "NA= not applicable" in this table.
- d According to NUREG/CR-6697, it is necessary to establish priorities about which parameters to collect data for and use for distribution analysis. The parameters were ranked into three levels of priority: 1 (high priority), 2 (medium priority), and 3 (low priority).
- e "-" indicates that the parameter is dimensionless.
- f Groundwater concentration can be input only if time since placement of material is >0.
- g This parameter should be used only if radionuclide leach rates are known.
- h NA = not applicable.

The Radon and Carbon-14 parameters are not included as part of this table because these radionuclides are not included in the contaminants of concern for this project. RESRAD allows the user to edit radon parameters only when a radon parent for either Rn-222 (U-238, U-234, Th-230, or Ra-226) or Rn-220 (Th-232, Ra-228, or Th-228) is present as a contaminant. Similarly, a user will have access to carbon-14 (C-14) parameters only if C-14 is a contaminant.

Notes:

The template for the table of parameters was created based on information available in NUREG/CR-6697 ANL/EAD/TM-98 "Development of Probabilistic RESRAD 6.0 and RESRAD-Build 3.0 Computer Codes" and the RESRAD 6.0 Manual.

Attachment I
Distribution Coefficients

DRAFT

Distribution Coefficients (Kds, cm³/g)^{a,b} for parent radionuclides in the contaminated zone, the unsaturated zones, and the saturated zone

Radionuclide	Am-241	Cs-137	Np-237	Pu-238	Pu-239/240	Tc-99	Th-228	Th-230	Th-232	U-234	U-235	U-238
Contaminated Zone ^c	1900	280	70	550	550	0.2	3200	3200	3200	66.8	66.8	66.8
Unsaturated Zone (native soil)	1900	280	70	550	550	0.2	3200	3200	3200	66.8	66.8	66.8
Saturated Zone(RGA)	1900	280	70	550	550	0.2	3200	3200	3200	66.8	66.8	66.8

^a Distribution coefficients for Am-241, Np-237, Th-230, Th-232, U-234 and U-238 were obtained from DOE 2003, page C3-313 and **Table Att. 1. Distribution coefficient of radionuclides and their daughter products in different zones**, page C3-314. It was assumed that the Kd for U-235 was similar to the Kd for U-234 and U-238 since the Kds are chemical specific.

^b Distribution coefficients for Cs-137, Th-228, Pu-238, Pu-239, and Pu-240 were obtained through "Project Communication" with the Waste Disposal Options Project Team from Paducah, KY. The distribution coefficients for Tc-99 are available in **Table C.3.1. Chemical and physical properties of different classes of chemicals identified as COPCs for the C-746-U Landfill** of DOE 2003, page C3-301. **Table 4.5 DUST model input parameters**, page 4-12, has Kds for Tc-99 and Uranium.

^c The contaminated zone is considered to be the first six inches of the Upper Continental Recharge System (UCRS). The remaining thickness off the UCRS is considered to be the unsaturated zone.

Distribution Coefficients (Kds, cm³/g)^d for progeny radionuclides in the contaminated zone, the unsaturated zones and the saturated zone

Radionuclide	Ac-227	Pa-231	Pb-210	Ra-226	Ra-228	Th-229	U-233	U-236
Contaminated Zone ^e	450	550	270	500	500	3200	66.8	66.8
Unsaturated Zone (native soil)	450	550	270	500	500	3200	66.8	66.8
Saturated Zone(RGA)	450	550	270	500	500	3200	66.8	66.8

^d Distribution coefficients for Ac-227, Pa-231, Pb-210, Ra-226, Ra-228, Th-229, and U-236 were obtained through "Project Communication" with the Waste Disposal Options Project Team from Paducah, KY. It was assumed that the Kds for U-233 was similar to the Kds for the other uranium isotopes (i.e. U-234, U-235, U-236 and U-238), since the Kds are chemical specific.

^e The contaminated zone is considered to be the first six inches of the Upper Continental Recharge System (UCRS). The remaining thickness off the UCRS is considered to be the unsaturated zone.

Attachment II
Calculations and Applicable Parameters from DOE 2009,
Appendix D, Converted into RESRAD Compatible Units

Section A. Runoff Coefficient and Evapotranspiration Coefficient Calculations

Average Annual Runoff (C_r) equation (Yu et al. 1993):

$$C_r = \frac{R_r}{P_r}$$

Runoff Coefficient for the Resident Farmer, Wildlife Worker and Recreational User:

Annual Runoff rate (R_r) = 0.38 m/yr (value converted from PRS 2008b, Table 4.10 Thornthwaite recharge calculations, page 4-26.) The lowest annual runoff rate from Table 4.10 was used for the DOE-Owned Property Outside the Limited Area.
 (15 in/yr) x (2.54E -02 m/in) = 0.38 m/yr

Table 4.10. Thornthwaite recharge calculations

Paducah, Kentucky															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year		
Mean Monthly Air Temperature, F	36.60	38.50	46.50	56.50	65.80	75.30	78.50	76.80	70.00	59.30	45.90	37.30			
Heat Index	0.36	0.60	2.06	4.55	7.42	10.78	12.01	11.33	8.85	5.37	1.93	0.44	65.70		
Unadjusted Potential Evaporation, in.	0.00	0.01	0.03	0.06	0.11	0.15	0.17	0.16	0.13	0.07	0.03	0.00			
Evaporation Adjustment Values	25.50	25.20	30.90	33.00	36.90	37.20	37.50	35.10	31.20	28.80	25.20	24.90			
Adjusted Potential Evaporation, in.	0.00	0.25	0.93	1.98	4.06	5.58	6.38	5.62	4.06	2.02	0.76	0.00			
Monthly Precipitation, in.	5.00	3.90	5.28	4.38	4.02	3.70	3.03	3.30	3.36	2.75	3.72	3.55	45.99		
Precipitation - Adj. Potential Evap., in.	5.00	3.65	4.35	2.40	-0.04	-1.88	-3.35	-2.32	-0.70	0.73	2.96	3.55			
Available for Recharge and Runoff, in.	5.00	3.65	4.35	2.40	0.00	0.00	0.00	0.00	0.00	0.73	2.96	3.55	22.64		
Available for Recharge and Runoff, in/yr													22.64		
- Runoff, in/yr													20	to	15
= Recharge, in/yr													2.64	to	7.64

← runoff rate

Average Annual Precipitation rate (P_r) = 1.24 m/yr (PRS 2008a, Page 1-4)
(49 in/yr) x (2.54E -02 m/in) = 1.24 m/yr

$$C_r = \frac{0.38 \text{ m/yr}}{1.24 \text{ m/yr}}, \quad \boxed{C_r = 0.31}$$

Evapotranspiration coefficient (C_e) equation from Yu et al. 1993:

$$C_e = \frac{ET_r}{(1 - C_r)P_r + IR_r}$$

Evapotranspiration Coefficient for the Resident Farmer, Wildlife Worker and Recreational User:

Evapotranspiration rate (ET_r) = 0.83 m/yr (value converted from information available at the Kentucky Climate Center's website, specifically information for Murray. As indicated on the webpage: "Murray was the highest in the state, with an annual mean potential evapotranspiration of 32.77 inches". This information is available at <http://kyclim.wku.edu/factsheets/meanevapky.html>)
(32.77 in/yr) x (2.54E -02 m/in) = 0.83 m/yr

Evapotranspiration Coefficient for the Resident Farmer, Resident Gardener, Outdoor Worker and Recreational User:

$$C_e = \frac{0.83 \text{ m/yr}}{(1 - 0.31)1.24 \text{ m/yr} + 0}, \quad \boxed{C_e = 0.97}$$

Section B. Parameters Applicable to the Resident Farmer

Soil Ingestion Rate

Parameters from the Risk Methods Document (DOE 2009), Appendix D				Conversion of Parameter Units into RESRAD Compatible Units																																																
<p>Table D.5. Reasonable maximum exposure assumptions and human intake factors for incidental ingestion soil by a rural resident^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_s \times CF \times EF \times FI \times ED \times IR}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_s \times CF_{rad} \times EF \times FI \times ED \times IR$				Conversion factor = Cf _{rad} (g/mg)	Ingestion rate of soil = IR (mg/d)	Exposure frequency = EF (days/yr)	RESRAD -Soil ingestion (g/yr) obtained by multiplying Cf _{rad} X IR X EF	Receptor																																												
<table border="1"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Chemical concentration in soil = C_s</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Radiological activity = A_s</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Conversion factor = CF</td> <td>kg/mg</td> <td>10⁻⁶</td> <td>----</td> </tr> <tr> <td>Conversion factor = CF_{rad}</td> <td>g/mg</td> <td>10⁻³</td> <td>----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>days/yr</td> <td>350</td> <td>[14]</td> </tr> <tr> <td>Fraction ingested = FI</td> <td>unitless</td> <td>1</td> <td>[14]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>years</td> <td>24 (adult) 6 (child)</td> <td>[14]</td> </tr> <tr> <td>Ingestion rate of soil = IR</td> <td>mg/d</td> <td>100 (adult) 200 (child)</td> <td>[14]</td> </tr> <tr> <td>Body weight = BW</td> <td>kg</td> <td>70 (adult) 15 (child)</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr × day/yr</td> <td>70 × 365 (carcinogen) ED × 365 (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table>				Parameter	Units	Value used	References ^b	Chemical concentration in soil = C _s	mg/kg	Chemical-specific	----	Radiological activity = A _s	pCi/g	Chemical-specific	----	Conversion factor = CF	kg/mg	10 ⁻⁶	----	Conversion factor = CF _{rad}	g/mg	10 ⁻³	----	Exposure frequency = EF	days/yr	350	[14]	Fraction ingested = FI	unitless	1	[14]	Exposure duration = ED	years	24 (adult) 6 (child)	[14]	Ingestion rate of soil = IR	mg/d	100 (adult) 200 (child)	[14]	Body weight = BW	kg	70 (adult) 15 (child)	[14]	Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]	1.00E-03	100	365	36.5	Adult Rural Resident which corresponds to the "Resident Farmer"
Parameter	Units	Value used	References ^b																																																	
Chemical concentration in soil = C _s	mg/kg	Chemical-specific	----																																																	
Radiological activity = A _s	pCi/g	Chemical-specific	----																																																	
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<p>^a Equation from [1].</p> <p>^b References follow Table D.50.</p>				<p>Note: The exposure frequency of 365 d/yr is used in the conversion, instead of 350 d/yr since RESRAD uses time fractions to correct for occupancy.</p>																																																

Inhalation Rate and Mass Loading for Inhalation

Parameters from the Risk Methods Document (DOE 2009), Appendix D	Conversion of Parameter Units into RESRAD Compatible Units																																																																				
<p>Table D.7. Reasonable maximum exposure assumptions and human intake factors for inhalation of vapors and particulates emitted from soil by a rural resident^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_s \times EF \times ED \times ET \times \left(\frac{1}{VF} + \frac{1}{PEF} \right) \times IR_{air}}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_s \times EF \times ED \times ET \times CF \times \left(\frac{1}{VF} + \frac{1}{PEF} \right) \times IR_{air}$ <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Concentration in soil = C_s</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Activity in soil = A_s</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/year</td> <td>350</td> <td>[14]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>years</td> <td>24 (adult) 6 (child)</td> <td>[14]</td> </tr> <tr> <td>Exposure time = ET</td> <td>hours/day</td> <td>24</td> <td>[14]</td> </tr> <tr> <td>Conversion factor = CF</td> <td>g/kg</td> <td>10³</td> <td>----</td> </tr> <tr> <td>Volatilization factor = VF</td> <td>m³/kg</td> <td>Chemical-specific</td> <td>[19]</td> </tr> <tr> <td>Particulate emission factor^c = PEF</td> <td>m³/kg</td> <td>9.3 × 10⁸</td> <td>[14]</td> </tr> <tr> <td>Total inhalation rate = IR_{air}</td> <td>m³/hour</td> <td>0.833</td> <td>[14]</td> </tr> <tr> <td>Body weight = BW</td> <td>kg</td> <td>70 (adult) 15 (child)</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr × day/yr</td> <td>70 × 365 (carcinogen) ED × 365 (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table> <p style="font-size: small; margin-top: 10px;"> ^a Equation from [20]. ^b References follow Table D.50. ^c PEFs from KRAGS use EPA default factors, except for the Q/C value which is based on the lower 90% confidence interval of the mean dispersion factor of climactic zone VII of Table 3 in the SSL Technical Background document [41]. </p>	Parameter	Units	Value used	References ^b	Concentration in soil = C _s	mg/kg	Chemical-specific	----	Activity in soil = A _s	pCi/g	Chemical-specific	----	Exposure frequency = EF	day/year	350	[14]	Exposure duration = ED	years	24 (adult) 6 (child)	[14]	Exposure time = ET	hours/day	24	[14]	Conversion factor = CF	g/kg	10 ³	----	Volatilization factor = VF	m ³ /kg	Chemical-specific	[19]	Particulate emission factor ^c = PEF	m ³ /kg	9.3 × 10 ⁸	[14]	Total inhalation rate = IR _{air}	m ³ /hour	0.833	[14]	Body weight = BW	kg	70 (adult) 15 (child)	[14]	Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]	<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th>Total inhalation rate = IR_{air} (m³/hour)</th> <th>Exposure time = ET (hours/day)</th> <th>Exposure frequency = EF (days/yr)</th> <th>RESRAD-Inhalation rate (m³/yr) obtained by multiplying IF X ET X EF</th> <th>Receptor</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0.833</td> <td style="text-align: center;">24</td> <td style="text-align: center;">365</td> <td style="text-align: center;">7,297</td> <td style="text-align: center;">Adult Rural Resident which corresponds to the "Resident Farmer"</td> </tr> </tbody> </table> <p style="font-size: small; margin-bottom: 10px;">Note: The exposure frequency of 365 d/yr is used in the conversion, instead of 350 d/yr since RESRAD uses time fractions to correct for occupancy.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>PEF (m³/kg)</th> <th>Conversion from kg to g</th> <th>PEF (m³/g)</th> <th>RESRAD-Mass Loading for Inhalation (g/m³) = 1/PEF</th> <th>Receptor</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">9.30E+08</td> <td style="text-align: center;">1000</td> <td style="text-align: center;">930000</td> <td style="text-align: center;">1.08E-06</td> <td style="text-align: center;">Adult Rural Resident which corresponds to the "Resident Farmer"</td> </tr> </tbody> </table>	Total inhalation rate = IR _{air} (m ³ /hour)	Exposure time = ET (hours/day)	Exposure frequency = EF (days/yr)	RESRAD-Inhalation rate (m ³ /yr) obtained by multiplying IF X ET X EF	Receptor	0.833	24	365	7,297	Adult Rural Resident which corresponds to the "Resident Farmer"	PEF (m ³ /kg)	Conversion from kg to g	PEF (m ³ /g)	RESRAD-Mass Loading for Inhalation (g/m ³) = 1/PEF	Receptor	9.30E+08	1000	930000	1.08E-06	Adult Rural Resident which corresponds to the "Resident Farmer"
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External Gamma Shielding Factor and Exposure Duration

Parameters from the Risk Methods Document (DOE 2009), Appendix D	Conversion of Parameter Units into RESRAD Compatible Units																											
<p>Table D.8. Reasonable maximum exposure assumptions and human intake factors for external exposure to ionizing radiation from soil by a rural resident^a</p> <hr/> <p>Equation:</p> $\text{Absorbed Dose [(pCi} \times \text{year)/g]} = A_s \times ED \times EF \times (1 - S_e) \times T_e$ <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">Parameter</th> <th style="text-align: left;">Units</th> <th style="text-align: left;">Value used</th> <th style="text-align: left;">References^b</th> </tr> </thead> <tbody> <tr> <td>Activity in soil = A_s</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Exposure duration = ED</td> <td>year</td> <td>24 (adult) 6 (child)</td> <td>[14]</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/day</td> <td>350/365</td> <td>[14]</td> </tr> <tr> <td>Gamma shielding factor = S_e</td> <td>unitless</td> <td>0.2</td> <td>[20]</td> </tr> <tr> <td>Gamma exposure time factor = T_e</td> <td>hr/hr</td> <td>24/24</td> <td>[20]</td> </tr> </tbody> </table> <p style="font-size: small; margin-top: 10px;"> ^a Equation from [20]. ^b References follow Table D.50. ^c AC cannot be greater than 1. </p>	Parameter	Units	Value used	References ^b	Activity in soil = A_s	pCi/g	Chemical-specific	----	Exposure duration = ED	year	24 (adult) 6 (child)	[14]	Exposure frequency = EF	day/day	350/365	[14]	Gamma shielding factor = S_e	unitless	0.2	[20]	Gamma exposure time factor = T_e	hr/hr	24/24	[20]	<p>Exposure duration = ED (years) -no conversion required since it is in RESRAD units</p>	<p>Gamma shielding factor = S_e (unitless)</p>	<p>Receptor</p>	<p>RESRAD external gamma shielding factor</p>
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Indoor and Outdoor Occupancy Fractions

Resident Farmer Occupancy Fractions		
	Days	Fractions for RESRAD
1/3 of the time outdoors	117	0.32
2/3 of the time indoors	233	0.64
Total Days Onsite	350	
Total Fraction		0.96

Note: The Resident Farmer spends 350 days/yr on site.

Fruit, Non-Leafy Vegetable, and Grain Consumption and Leafy Vegetables Consumption

Parameters from the Risk Methods Document (DOE 2009), Appendix D				Conversion of Parameter Units into RESRAD Compatible Units																																											
<p>Table D.9. Reasonable maximum exposure assumptions and human intake factors for consumption of home-grown vegetables by a rural resident^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{\text{vegetables}} \times FI_v \times IR_v \times EF \times ED}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{\text{vegetables}} \times FI_v \times IR_v \times EF \times ED \times CF$				<table border="1"> <tr> <td>Ingestion rate^c = IR_v (kg/d)</td> <td>Exposure frequency = EF (d/yr)</td> <td>Home grown vegetables consumption (kg/yr) obtained by multiplying IR X EF</td> <td>Receptor</td> </tr> <tr> <td>0.72</td> <td>350</td> <td>252</td> <td>Adult Rural Resident which corresponds to the "Resident Farmer"</td> </tr> </table> <p>Note: This table is for home grown vegetables, it does not specify fruit, and grain. The ratio of this value is used for RESRAD as the Fruit, vegetable, and grain consumption (kg/yr) and for Leafy Vegetables (kg/yr).</p> <table border="1"> <thead> <tr> <th></th> <th>RESRAD default</th> <th>Calculation</th> <th>Ratio of values to use in RESRAD</th> </tr> </thead> <tbody> <tr> <td>Fruit, vegetable, and grain consumption (kg/yr)</td> <td>160</td> <td>$\frac{160}{174 \times 252}$</td> <td>231.7</td> </tr> <tr> <td>Leafy vegetables consumption (kg/yr)</td> <td>14</td> <td>$\frac{14}{174 \times 252}$</td> <td>20.3</td> </tr> <tr> <td>Total (kg/yr)</td> <td>174</td> <td>NA</td> <td>252</td> </tr> </tbody> </table>				Ingestion rate ^c = IR _v (kg/d)	Exposure frequency = EF (d/yr)	Home grown vegetables consumption (kg/yr) obtained by multiplying IR X EF	Receptor	0.72	350	252	Adult Rural Resident which corresponds to the "Resident Farmer"		RESRAD default	Calculation	Ratio of values to use in RESRAD	Fruit, vegetable, and grain consumption (kg/yr)	160	$\frac{160}{174 \times 252}$	231.7	Leafy vegetables consumption (kg/yr)	14	$\frac{14}{174 \times 252}$	20.3	Total (kg/yr)	174	NA	252																
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Milk Consumption

Parameters from the Risk Methods Document (DOE 2009), Appendix D	Conversion of Parameter Units into RESRAD Compatible Units																																														
<p>Table D.11. Reasonable maximum exposure assumptions and human intake factors for consumption of milk by a rural resident^a</p> <hr/> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{\text{milk}} \times FI_m \times IR_m \times EF \times ED}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{\text{milk}} \times FI_m \times IR_m \times EF \times ED$ <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">Parameter</th> <th style="text-align: left;">Units</th> <th style="text-align: left;">Value used</th> <th style="text-align: left;">References^b</th> </tr> </thead> <tbody> <tr> <td>Chemical concentration in milk = C_{milk}</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>See Table D.47</td> </tr> <tr> <td>Radiological activity in milk = A_{milk}</td> <td>pCi/kg</td> <td>Chemical-specific</td> <td>See Table D.47</td> </tr> <tr> <td>Milk ingestion rate^c = IR_m</td> <td>kg/day</td> <td>0.9 (child 1 – 7) 1.25 (adult 8 – 41)</td> <td>[23]</td> </tr> <tr> <td>Diet fraction = FI_m</td> <td>unitless</td> <td>1</td> <td>[21]</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>d/year</td> <td>350</td> <td>[14]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>years</td> <td>6 (child) 24 (adult)</td> <td>[14]</td> </tr> <tr> <td>Body weight (adult) = BW</td> <td>kg</td> <td>15 (child) 70 (adult)</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr \times day/yr</td> <td>70 \times 365 (carcinogen) ED \times 365 (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table> <p style="font-size: small; margin-top: 10px;"> ^a Equation from [1]. ^b References follow Table D.50. ^c Ingestion values represent the 95th percentile of individuals who consume this food group. </p>	Parameter	Units	Value used	References ^b	Chemical concentration in milk = C_{milk}	mg/kg	Chemical-specific	See Table D.47	Radiological activity in milk = A_{milk}	pCi/kg	Chemical-specific	See Table D.47	Milk ingestion rate ^c = IR_m	kg/day	0.9 (child 1 – 7) 1.25 (adult 8 – 41)	[23]	Diet fraction = FI_m	unitless	1	[21]	Exposure frequency = EF	d/year	350	[14]	Exposure duration = ED	years	6 (child) 24 (adult)	[14]	Body weight (adult) = BW	kg	15 (child) 70 (adult)	[14]	Averaging time = AT	yr \times day/yr	70 \times 365 (carcinogen) ED \times 365 (noncarcinogen)	[14]	<table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 15%;">Milk ingestion rate^c = IR_b (kg/day)</th> <th style="width: 15%;">Exposure frequency = EF (d/yr)</th> <th style="width: 15%;">Milk consumption (kg/yr) obtained by multiplying $IR \times EF$</th> <th style="width: 15%;">RESRAD-Milk consumption (L/yr) obtained by dividing the milk consumption (kg/yr) by the density of milk and then multiplying by 1000</th> <th style="width: 15%;">Receptor</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.25</td> <td style="text-align: center;">350</td> <td style="text-align: center;">437.5</td> <td style="text-align: center;">425</td> <td style="text-align: center;">Adult Rural Resident which corresponds to the "Resident Farmer"</td> </tr> </tbody> </table> <p style="font-size: small; margin-top: 10px;"> Density of milk, cow, whole= 1,030 kg/m³ 1 cubic meter = 1,000 liters This density was obtained from an online source: http://physics.info/density/ </p>	Milk ingestion rate ^c = IR_b (kg/day)	Exposure frequency = EF (d/yr)	Milk consumption (kg/yr) obtained by multiplying $IR \times EF$	RESRAD-Milk consumption (L/yr) obtained by dividing the milk consumption (kg/yr) by the density of milk and then multiplying by 1000	Receptor	1.25	350	437.5	425	Adult Rural Resident which corresponds to the "Resident Farmer"
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Meat and Poultry Consumption

Parameters from the Risk Methods Document (DOE 2009), Appendix D		Conversion of Parameter Units into RESRAD Compatible Units																																							
<p>Table D.10. Reasonable maximum exposure assumptions and human intake factors for consumption of beef by a rural resident^a</p> <hr/> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{\text{beef}} \times FI_b \times IR_b \times EF \times ED}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{\text{beef}} \times FI_b \times IR_b \times EF \times ED$		Beef ingestion rate ^c = IR _b (kg/day)	Exposure frequency = EF (d/yr)	Meat consumption (kg/yr) obtained by multiplying IR X EF	Receptor																																				
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Meat and Poultry Consumption (cont.)

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Meat and Poultry Consumption (cont.)

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Section B. Parameters Applicable to the Wildlife Worker

Soil Ingestion Rate

Parameters from the Risk Methods Document (DOE 2009), Appendix D				Conversion of Parameter Units into RESRAD Compatible Units				
<p>Table D.5. Reasonable maximum exposure assumptions and human intake factors for incidental ingestion soil by a rural resident^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_s \times CF \times EF \times FI \times ED \times IR}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_s \times CF_{rad} \times EF \times FI \times ED \times IR$				Conversion factor = Cf _{rad} (g/mg)	Ingestion rate of soil = IR (mg/d)	Exposure frequency = EF (days/yr)	RESRAD -Soil ingestion (g/yr) obtained by multiplying Cf _{rad} X IR X EF	Receptor
Parameter	Units	Value used	References ^b	1.00E-03	100	365	36.5	Rural Resident which corresponds to the "Wildlife Worker". See note below.
Chemical concentration in soil = C _s	mg/kg	Chemical-specific	----					
Radiological activity = A _s	pCi/g	Chemical-specific	----					
Conversion factor = CF	kg/mg	10 ⁻⁶	----					
Conversion factor = CF _{rad}	g/mg	10 ⁻³	----					
Exposure frequency = EF	days/yr	350	[14]					
Fraction ingested = FI	unitless	1	[14]					
Exposure duration = ED	years	24 (adult) 6 (child)	[14]					
Ingestion rate of soil = IR	mg/d	100 (adult) 200 (child)	[14]					
Body weight = BW	kg	70 (adult) 15 (child)	[14]					
Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]					
<p>^a Equation from [1].</p> <p>^b References follow Table D.50.</p>				<p>Note: It is assumed that the Wildlife Worker has the same soil ingestion rate as the Rural Resident in DOE 2009, Table D.5. As mentioned earlier in the table of parameters, the Wildlife Worker duties include tending to crops (farming). The soil ingestion rate available in DOE 2009 for the industrial worker is 50 mg/d which is half of what is being assumed. The soil ingestion rate in DOE 2009 for the excavation worker is 480 mg/d which is considered too high for duties performed by the Wildlife Worker.</p>				

Inhalation Rate and Mass Loading for Inhalation

Parameters from the Risk Methods Document (DOE 2009), Appendix D	Conversion of Parameter Units into RESRAD Compatible Units																																																																	
<p>Table D.38. Reasonable maximum exposure assumptions and human intake factors for inhalation of vapors and particulates emitted from soil by an excavation worker^a</p> <hr/> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_i \times EF \times ED \times ET \times \left(\frac{1}{VF} + \frac{1}{PEF} \right) \times IR_{air}}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_i \times EF \times ED \times ET \times CF \times \left(\frac{1}{PEF} \right) \times IR_{air}$ <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Concentration in soil or sediment = C_i</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Activity in soil or sediment = A_i</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Conversion factor = CF</td> <td>g/kg</td> <td>10³</td> <td>----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/yr</td> <td>185</td> <td>[14]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>years</td> <td>25</td> <td>[20]</td> </tr> <tr> <td>Exposure time = ET</td> <td>hours/day</td> <td>8</td> <td>[14]</td> </tr> <tr> <td>Volatilization factor = VF</td> <td>m³/kg</td> <td>Chemical-specific</td> <td>[19]</td> </tr> <tr> <td>Particulate emission factor^c = PEF</td> <td>m³/kg</td> <td>6.2 × 10⁸</td> <td>[14]</td> </tr> <tr> <td>Inhalation rate = IR_{air}</td> <td>m³/hour</td> <td>2.5</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr × day/yr</td> <td>70 × 365 (carcinogen) ED × 365 (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table> <p style="font-size: small; margin-top: 10px;"> ^a Equation from [20]. ^b References follow Table D.50. ^c PEFs from KRAGS use EPA default factors, except for the Q/C value which is based on the lower 90% confidence interval of the mean dispersion factor of climactic zone VII of Table 3 in the SSL Technical Background document [41]. </p>	Parameter	Units	Value used	References ^b	Concentration in soil or sediment = C _i	mg/kg	Chemical-specific	----	Activity in soil or sediment = A _i	pCi/g	Chemical-specific	----	Conversion factor = CF	g/kg	10 ³	----	Exposure frequency = EF	day/yr	185	[14]	Exposure duration = ED	years	25	[20]	Exposure time = ET	hours/day	8	[14]	Volatilization factor = VF	m ³ /kg	Chemical-specific	[19]	Particulate emission factor ^c = PEF	m ³ /kg	6.2 × 10 ⁸	[14]	Inhalation rate = IR _{air}	m ³ /hour	2.5	[14]	Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Total inhalation rate = IR_{air} (m³/hour)</td> <td style="width: 15%;">Exposure time = ET (hours/day)</td> <td style="width: 15%;">Exposure frequency = EF (days/yr)</td> <td style="width: 15%;">RESRAD-Inhalation rate (m³/yr) obtained by multiplying IF X ET X EF</td> <td style="width: 20%;">Receptor</td> </tr> <tr> <td style="text-align: center;">2.5</td> <td style="text-align: center;">24</td> <td style="text-align: center;">365</td> <td style="text-align: center;">21,900 (20,000 is the maximum allowed in the code)</td> <td style="text-align: center;">Excavation Worker which corresponds to the "Wildlife Worker"</td> </tr> </table> <p style="font-size: small; margin-top: 10px;"> Note: The value of 21,900 is higher than the maximum value allowed in the RESRAD code which is 20,000. The exposure frequency of 365 d/yr is used in the conversion, since RESRAD uses time fractions to correct for occupancy. </p>	Total inhalation rate = IR _{air} (m ³ /hour)	Exposure time = ET (hours/day)	Exposure frequency = EF (days/yr)	RESRAD-Inhalation rate (m ³ /yr) obtained by multiplying IF X ET X EF	Receptor	2.5	24	365	21,900 (20,000 is the maximum allowed in the code)	Excavation Worker which corresponds to the "Wildlife Worker"	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">PEF (m³/kg)</td> <td style="width: 15%;">Conversion from kg to g</td> <td style="width: 15%;">PEF (m³/g)</td> <td style="width: 15%;">RESRAD - Mass Loading for Inhalation (g/m³) = 1/PEF</td> <td style="width: 20%;">Receptor</td> </tr> <tr> <td style="text-align: center;">6.20E+08</td> <td style="text-align: center;">1000</td> <td style="text-align: center;">6.20E+05</td> <td style="text-align: center;">1.61E-06</td> <td style="text-align: center;">Excavation Worker which corresponds to the "Wildlife Worker"</td> </tr> </table>	PEF (m ³ /kg)	Conversion from kg to g	PEF (m ³ /g)	RESRAD - Mass Loading for Inhalation (g/m ³) = 1/PEF	Receptor	6.20E+08	1000	6.20E+05	1.61E-06	Excavation Worker which corresponds to the "Wildlife Worker"
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External Gamma Shielding Factor and Exposure Duration

Parameters from the Risk Methods Document (DOE 2009), Appendix D	Conversion of Parameter Units into RESRAD Compatible Units																											
<p>Table D.40. Reasonable maximum exposure assumptions and human intake factors for external exposure to ionizing radiation from soil by an excavation worker^a</p> <hr/> <p>Equation:</p> $\text{Absorbed Dose } [(pCi \times \text{year})/g] = A_s \times ED \times EF \times (1 - S_e) \times T_e$ <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">Parameter</th> <th style="text-align: left;">Units</th> <th style="text-align: left;">Value used</th> <th style="text-align: left;">References^b</th> </tr> </thead> <tbody> <tr> <td>Activity in soil or sediment = A_s</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>-----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/day</td> <td>185/365</td> <td>[14], [20]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>year</td> <td>25</td> <td>[20]</td> </tr> <tr> <td>Gamma shielding factor = S_e</td> <td>unitless</td> <td>0.2</td> <td>[20]</td> </tr> <tr> <td>Gamma exposure time factor = T_e</td> <td>hr/hr</td> <td>8/24</td> <td>[20]</td> </tr> </tbody> </table> <p>^a Equation from [20]. ^b References follow Table D.50.</p>	Parameter	Units	Value used	References ^b	Activity in soil or sediment = A_s	pCi/g	Chemical-specific	-----	Exposure frequency = EF	day/day	185/365	[14], [20]	Exposure duration = ED	year	25	[20]	Gamma shielding factor = S_e	unitless	0.2	[20]	Gamma exposure time factor = T_e	hr/hr	8/24	[20]	<p>Exposure duration = ED (years) -no conversion required since it is in RESRAD units</p>	<p>Gamma shielding factor = S_e (unitless)</p>	<p>Receptor</p>	<p>RESRAD external gamma shielding factor</p>
Parameter	Units	Value used	References ^b																									
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Outdoor Time Fraction

Parameters from the Risk Methods Document (DOE 2009), Appendix D	Conversion of Parameter Units into RESRAD Compatible Units																														
<p>Table D.40. Reasonable maximum exposure assumptions and human intake factors for external exposure to ionizing radiation from soil by an excavation worker^a</p> <hr/> <p>Equation:</p> $\text{Absorbed Dose } [(pCi \times \text{year})/g] = A_s \times ED \times EF \times (1 - S_e) \times T_e$ <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">Parameter</th> <th style="text-align: left;">Units</th> <th style="text-align: left;">Value used</th> <th style="text-align: left;">References^b</th> </tr> </thead> <tbody> <tr> <td>Activity in soil or sediment = A_s</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>-----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/day</td> <td>185/365</td> <td>[14], [20]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>year</td> <td>25</td> <td>[20]</td> </tr> <tr> <td>Gamma shielding factor = S_e</td> <td>unitless</td> <td>0.2</td> <td>[20]</td> </tr> <tr> <td>Gamma exposure time factor = T_e</td> <td>hr/hr</td> <td>8/24</td> <td>[20]</td> </tr> </tbody> </table> <p>^a Equation from [20]. ^b References follow Table D.50.</p>	Parameter	Units	Value used	References ^b	Activity in soil or sediment = A_s	pCi/g	Chemical-specific	-----	Exposure frequency = EF	day/day	185/365	[14], [20]	Exposure duration = ED	year	25	[20]	Gamma shielding factor = S_e	unitless	0.2	[20]	Gamma exposure time factor = T_e	hr/hr	8/24	[20]	<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="padding: 5px;">$185 \text{ d/yr} \div 365 \text{ d/yr} =$</td> <td style="padding: 5px; text-align: right;">0.51</td> </tr> <tr> <td style="padding: 5px;">$8 \text{ h} \div 24 \text{ h} =$</td> <td style="padding: 5px; text-align: right;">0.33</td> </tr> <tr> <td style="padding: 5px;">Outdoor time fraction for the Worker $0.51 \times 0.33 =$</td> <td style="padding: 5px; text-align: right;">0.17</td> </tr> </table> <p>Note: It is assumed the Worker is outdoors 185 d/yr and works 8 hr/d.</p>	$185 \text{ d/yr} \div 365 \text{ d/yr} =$	0.51	$8 \text{ h} \div 24 \text{ h} =$	0.33	Outdoor time fraction for the Worker $0.51 \times 0.33 =$	0.17
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Section C. Parameters Applicable to the Recreational User

Soil Ingestion Rate

Parameters from the Risk Methods Document (DOE 2009), Appendix D				Conversion of Parameter Units into RESRAD Compatible Units																																																								
<p>Table D.15. Reasonable maximum exposure assumptions and human intake factors for incidental ingestion of sediment by a recreational user^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{sed} \times CF \times EF \times ED \times ET \times CF_2 \times IR \times FI}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{sed} \times CF_{rad} \times EF \times ED \times ET \times CF_2 \times IR \times FI$				Conversion factor = Cf _{rad} (g/mg)	Ingestion rate of soil = IR (mg/d)	Exposure frequency = EF (days/yr)	RESRAD -Soil ingestion (g/yr) obtained by multiplying Cf _{rad} X IR X EF	Receptor																																																				
<table border="1"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Concentration in sediment = C_{sed}</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Conversion factor = CF</td> <td>kg/mg</td> <td>10⁶</td> <td>----</td> </tr> <tr> <td>Activity in soil = A_{sed}</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Conversion factor = CF_{rad}</td> <td>g/mg</td> <td>10³</td> <td>----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/yr</td> <td>104 (adult) 140 (child and teen)</td> <td>[14]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>year</td> <td>12 (adult) 12 (teen) 6 (child)</td> <td>[14]</td> </tr> <tr> <td>Exposure time = ET</td> <td>hr/day</td> <td>5</td> <td>[14]</td> </tr> <tr> <td>Conversion factor = CF₂</td> <td>day/hr</td> <td>1/24</td> <td>----</td> </tr> <tr> <td>Ingestion rate = IR</td> <td>mg/day</td> <td>100 (adult) 100 (teen) 200 (child)</td> <td>[14]</td> </tr> <tr> <td>Fraction ingested = FI</td> <td>unitless</td> <td>1</td> <td>[14]</td> </tr> <tr> <td>Body weight = BW</td> <td>kg</td> <td>70 (adult) 43 (teen) 15 (child)</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr × day/yr</td> <td>70 × 365 (carcinogen) ED × 365 (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table>				Parameter	Units	Value used	References ^b	Concentration in sediment = C _{sed}	mg/kg	Chemical-specific	----	Conversion factor = CF	kg/mg	10 ⁶	----	Activity in soil = A _{sed}	pCi/g	Chemical-specific	----	Conversion factor = CF _{rad}	g/mg	10 ³	----	Exposure frequency = EF	day/yr	104 (adult) 140 (child and teen)	[14]	Exposure duration = ED	year	12 (adult) 12 (teen) 6 (child)	[14]	Exposure time = ET	hr/day	5	[14]	Conversion factor = CF ₂	day/hr	1/24	----	Ingestion rate = IR	mg/day	100 (adult) 100 (teen) 200 (child)	[14]	Fraction ingested = FI	unitless	1	[14]	Body weight = BW	kg	70 (adult) 43 (teen) 15 (child)	[14]	Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]	1.00E-03	100	365	36.5	Recreational User-Teen which corresponds to the "Recreational User"
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Inhalation Rate and Mass Loading for Inhalation

Parameters from the Risk Methods Document (DOE 2009), Appendix D	Conversion of Parameter Units into RESRAD Compatible Units																																																																				
<p>Table D.17. Reasonable maximum exposure assumptions and human intake factors for inhalation of vapors or particulates emitted from sediment by a recreational user^a</p> <p>Equations:</p> $\text{Chemical Intake [mg/(kg} \times \text{day)]} = \frac{C_{sed} \times EF \times ED \times ET \times \left(\frac{1}{VF} + \frac{1}{PEF} \right) \times IR_{air}}{BW \times AT}$ $\text{Radionuclide Intake (pCi)} = A_{sed} \times EF \times ED \times ET \times CF \times \left(\frac{1}{PEF} \right) \times IR_{air}$ <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Concentration in sediment = C_{sed}</td> <td>mg/kg</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Activity in sediment = A_{sed}</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/year</td> <td>104 (adult) 140 (teen) 140 (child)</td> <td>[14]</td> </tr> <tr> <td>Exposure duration = ED</td> <td>years</td> <td>12 (adult) 12 (teen) 6 (child)</td> <td>[14]</td> </tr> <tr> <td>Exposure time = ET</td> <td>hour/day</td> <td>5</td> <td>[14]</td> </tr> <tr> <td>Conversion factor = CF</td> <td>g/kg</td> <td>10^3</td> <td>----</td> </tr> <tr> <td>Volatilization factor = VF</td> <td>m^3/kg</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Particulate emission factor^c = PEF</td> <td>m^3/kg</td> <td>9.3×10^8</td> <td>[14]</td> </tr> <tr> <td>Total inhalation rate = IR_{air}</td> <td>$m^3/hour$</td> <td>2.5</td> <td>[14]</td> </tr> <tr> <td>Body weight = BW</td> <td>kg</td> <td>70 (adult) 43 (teen) 15 (child)</td> <td>[14]</td> </tr> <tr> <td>Averaging time = AT</td> <td>yr \times day/yr</td> <td>70×365 (carcinogen) $ED \times 365$ (noncarcinogen)</td> <td>[14]</td> </tr> </tbody> </table> <p>^a Equation after [1]. ^b References follow Table D.50. ^c PEFs from KRAGS use EPA default factors, except for the Q/C value which is based on the lower 90% confidence interval of the mean dispersion factor of climactic zone VII of Table 3 in the SSL Technical Background document [41].</p>	Parameter	Units	Value used	References ^b	Concentration in sediment = C_{sed}	mg/kg	Chemical-specific	----	Activity in sediment = A_{sed}	pCi/g	Chemical-specific	----	Exposure frequency = EF	day/year	104 (adult) 140 (teen) 140 (child)	[14]	Exposure duration = ED	years	12 (adult) 12 (teen) 6 (child)	[14]	Exposure time = ET	hour/day	5	[14]	Conversion factor = CF	g/kg	10^3	----	Volatilization factor = VF	m^3/kg	Chemical-specific	----	Particulate emission factor ^c = PEF	m^3/kg	9.3×10^8	[14]	Total inhalation rate = IR_{air}	$m^3/hour$	2.5	[14]	Body weight = BW	kg	70 (adult) 43 (teen) 15 (child)	[14]	Averaging time = AT	yr \times day/yr	70×365 (carcinogen) $ED \times 365$ (noncarcinogen)	[14]	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Total inhalation rate = IR_{air} ($m^3/hour$)</th> <th>Exposure time = ET (hours/day)</th> <th>Exposure frequency = EF (days/yr)</th> <th>RESRAD-Inhalation rate (m^3/yr) obtained by multiplying IF X ET X EF</th> <th>Receptor</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2.5</td> <td style="text-align: center;">24</td> <td style="text-align: center;">365</td> <td style="text-align: center;">21,900 (20,000 is the maximum allowed in the code)</td> <td style="text-align: center;">Recreational User-Teen which corresponds to the "Recreational User"</td> </tr> </tbody> </table> <p>Notes: The value of 21,900 is higher than the maximum value allowed in the RESRAD code which is 20,000. The exposure frequency of 365 d/yr is used in the conversion, instead of 140 d/yr (teen) since RESRAD uses time fractions to correct for occupancy.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>PEF (m^3/kg)</th> <th>Conversion from kg to g</th> <th>PEF (m^3/g)</th> <th>RESRAD - Mass Loading for Inhalation (g/m^3) = 1/PEF</th> <th>Receptor</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">9.30E+08</td> <td style="text-align: center;">1000</td> <td style="text-align: center;">930000</td> <td style="text-align: center;">1.08E-06</td> <td style="text-align: center;">Recreational User-Teen which corresponds to the "Recreational User"</td> </tr> </tbody> </table>	Total inhalation rate = IR_{air} ($m^3/hour$)	Exposure time = ET (hours/day)	Exposure frequency = EF (days/yr)	RESRAD-Inhalation rate (m^3/yr) obtained by multiplying IF X ET X EF	Receptor	2.5	24	365	21,900 (20,000 is the maximum allowed in the code)	Recreational User-Teen which corresponds to the "Recreational User"	PEF (m^3/kg)	Conversion from kg to g	PEF (m^3/g)	RESRAD - Mass Loading for Inhalation (g/m^3) = 1/PEF	Receptor	9.30E+08	1000	930000	1.08E-06	Recreational User-Teen which corresponds to the "Recreational User"
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External Gamma Shielding Factor and Exposure Duration

Parameters from the Risk Methods Document (DOE 2009), Appendix D	Conversion of Parameter Units into RESRAD Compatible Units																																
<p>Table D.18. Reasonable maximum exposure assumptions and human intake factors for external exposure to ionizing radiation from sediment by a recreational user^a</p> <p>Equation:</p> $\text{Absorbed Dose } [(pCi \times \text{year})/g] = A_{sed} \times ED \times EF \times (1 - S_e) \times T_e$ <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Parameter</th> <th>Units</th> <th>Value used</th> <th>References^b</th> </tr> </thead> <tbody> <tr> <td>Activity in soil = A_{sed}</td> <td>pCi/g</td> <td>Chemical-specific</td> <td>----</td> </tr> <tr> <td>Exposure duration = ED</td> <td>year</td> <td>12 (adult) 12 (teen) 6 (child)</td> <td>[14]</td> </tr> <tr> <td>Exposure frequency = EF</td> <td>day/day</td> <td>104/365 (adult) 140/365 (teen) 140/365 (child)</td> <td>[14]</td> </tr> <tr> <td>Gamma shielding factor = S_e</td> <td>unitless</td> <td>0.0</td> <td>[40]</td> </tr> <tr> <td>Gamma exposure time factor = T_e</td> <td>hr/hr</td> <td>5/24</td> <td>[20]</td> </tr> </tbody> </table> <p>^a Equation from [20]. ^b References follow Table D.50.</p>	Parameter	Units	Value used	References ^b	Activity in soil = A_{sed}	pCi/g	Chemical-specific	----	Exposure duration = ED	year	12 (adult) 12 (teen) 6 (child)	[14]	Exposure frequency = EF	day/day	104/365 (adult) 140/365 (teen) 140/365 (child)	[14]	Gamma shielding factor = S_e	unitless	0.0	[40]	Gamma exposure time factor = T_e	hr/hr	5/24	[20]	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Exposure duration = ED (years) -no conversion required since it is in RESRAD units</td> <td style="width: 15%;">Gamma shielding factor = S_e (unitless)</td> <td style="width: 20%;">Receptor</td> <td style="width: 50%;">RESRAD external gamma shielding factor</td> </tr> <tr> <td style="text-align: center;">25</td> <td style="text-align: center;">0</td> <td style="text-align: center;">Recreational User-Teen which corresponds to the "Recreational User"</td> <td style="text-align: center;">1 (1 - 0)</td> </tr> </table>	Exposure duration = ED (years) -no conversion required since it is in RESRAD units	Gamma shielding factor = S_e (unitless)	Receptor	RESRAD external gamma shielding factor	25	0	Recreational User-Teen which corresponds to the "Recreational User"	1 (1 - 0)
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25	0	Recreational User-Teen which corresponds to the "Recreational User"	1 (1 - 0)																														

Outdoor Time Fraction (Recreational User-Teenager)

140 d/yr ÷ 365 d/yr=	0.38
5 h ÷ 24 h=	0.21
Outdoor time fraction for the RU-teenager 0.38 x 0.21=	0.08
<p>Note: The Recreational User is considered to be a teenager who will spend 5 h/d, 140 d/yr on the contaminated site.</p>	

Section E. Parameters Applicable to Beef and Dairy from the Risk Methods Document (DOE 2009), Appendix D

Table D.46. Reasonable maximum exposure assumptions for concentration or activity of COPCs in beef^a

Equations:

$$C_{beef} = F_{beef} \times [(C_{forage} \times AC \times f_s \times Q_f) + (C_s \times AC \times Q_s) + (C_{sw} \times CF_{rad} \times Q_{sw})]$$

$$C_{forage} = (C_s \times R_{upp}) + (C_s \times R_{es})$$

Parameter	Units	Value used	References ^b
Chemical concentration in beef = C_{beef}	mg/kg or pCi/g	Chemical-specific	Calculated
Forage-beef transfer factor = F_{beef}	day/kg	Chemical-specific	----
Chemical concentration in pasture = C_{forage}	mg/kg or pCi/g	Chemical-specific	Calculated
Area of contact ^c = AC	unitless	AS/AD	----
Area of SWMU = AS	acres	SWMU-specific	----
Area of beef range = AD	acres	2	[29]
Fraction of beef's food from site when on site = f_s	unitless	1.0	[5]
Quantity of pasture ingested daily by beef = Q_f	kg/day	25	[25]
Chemical concentration in soil or sediment = C_s	mg/kg or pCi/g	Chemical-specific	----
Quantity of soil ingested daily by beef = Q_s	kg/day	1	[26]
Contaminant concentration in water = C_w	mg/L or pCi/L	Chemical-specific	----
Conversion factor for radionuclides = CF_{rad}	kg/g	10^{-3}	----
Quantity of water ingested daily by beef = Q_w	L/day	50	[25]
Soil to plant uptake (dry) = R_{upp}	unitless	Chemical-specific or $38 \times K_{ow}^{-0.58}$	[8]
Soil resuspension multiplier = R_{es}	unitless	0.25	[3]

^a Equations after [1], [2], [3], [4].

^b All references follow Table D.50.

^c AC cannot be greater than 1.

^d All ingested water is considered to be from SWMU or SWMU area.

Values that were used to determine input parameters are highlighted.

Table D.47. Reasonable maximum exposure assumptions for concentration or activity of COPCs in milk^a

Equations:

$$C_{milk} = F_{milk} \times [(C_{forage} \times AC \times f_s \times Q_f) + (C_s \times AC \times Q_s) + (C_w \times CF_{rad} \times Q_{sw})]$$

$$C_{forage} = (C_s \times R_{upp}) + (C_s \times R_{es})$$

Parameter	Units	Value used	References ^b
Chemical concentration in milk = C_{milk}	mg/kg or pCi/g	Chemical-specific	Calculated
Forage-milk transfer factor = F_{milk}	day/kg	Chemical-specific	----
Chemical concentration in pasture = C_{forage}	mg/kg or pCi/g	Chemical-specific	Calculated
Area of contact ^c = AC	unitless	AS/AD	----
Area of SWMU = AS	acres	SWMU-specific	----
Area of dairy range = AD	acres	2	[29]
Fraction of dairy's food from site when on site = f_s	unitless	1.0	[5]
Quantity of pasture ingested daily by dairy = Q_f	kg/day	25	[25]
Chemical concentration in soil or sediment = C_s	mg/kg or pCi/g	Chemical-specific	----
Quantity of soil ingested daily by dairy = Q_s	kg/day	1	[26]
Contaminant concentration in water = C_w	mg/L or pCi/L	Chemical-specific	----
Conversion factor for radionuclides = CF_{rad}	kg/g	10^{-3}	----
Quantity of water ingested daily by dairy = Q_w	L/day	60	[25]
Soil to plant uptake (dry) = R_{upp}	unitless	Chemical-specific or $38 \times K_{ow}^{-0.58}$	[8]
Soil resuspension multiplier = R_{es}	unitless	0.25	[3]

^a Equations after [1], [2], [3], [4].

^b All references follow Table D.50.

^c AC cannot be greater than 1.

^d All ingested water is considered to be from SWMU or SWMU area.

Values that were used to determine input parameters are highlighted.

References

DOE 2003. *Risk and Performance Evaluation of the C-746-U Landfill at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/OR/07-2041&D2R1)

DOE 2009. *Methods for Conducting Risk Assessments and Risk Evaluations at the Paducah Gaseous Diffusion Plant Paducah, Kentucky Volume 1. Human Health* (DOE/LX/07-0107&D1/V1).

DOE Statement of Work (SOW) for C-746-U Landfill provided to ORISE on December 2009.

DOE C-746-U landfill inventory spreadsheet for total waste disposed from May 2003 through May 2009.

DOE Project Communication with the Waste Disposal Operations Project Team from Paducah, KY, March 2010 (Email correspondence 03/29/2010 from Rich Bonczek)

DOE Project Communication with the Geologist from Paducah, KY, April 2010. (Email correspondence 04/05/2010 from Raulie Casteel)

DOE Project Communication with Geologist and Engineer from Paducah, KY, April 2010 (Email correspondence 04/07/2010 from Raulie Casteel)

DOE Project Communication with the Facility Representative DOE-PPPO from Paducah, KY, May 2010. (Email correspondence 05/05/2010 from Don Dihel)

DOE Project Communication May, 2010 (Discussion between ORISE and Rich Bonczek during a meeting held at ORISE on 05/17/2010)

DOE Project Communication June, 2010 (Email correspondence 06/02/2010 from ORISE to DOE)

DOE Project Communication July, 2010 (Discussion between ORISE and DOE-PPPO during a meeting held at ORISE on 07/12/2010)

DOE Project Communication August, 2010 (Email correspondence 08/11/2010 from Don Dihel to ORISE)

DOE Project Communication September, 2010 (Discussion between ORISE and DOE-PPPO during a conference call held on 09/29/2010)

DOE Project Communication December, 2010 (Email correspondence 12/6/2010 from DOE consultant (John Volpe to ORISE)

DOE Project Communication December, 2010 (Email correspondence 12/28/2010 from DOE consultant (John Volpe to ORISE)

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ATTACHMENT 2

SUMMARY REPORT FOR RESIDENT FARMER

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1 (1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1 (2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1 (3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1 (4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1 (5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1 (6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1 (7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1 (8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1 (9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1 (10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1 (11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1 (12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1 (13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1 (14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1 (15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1 (16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1 (17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1 (18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1 (19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1 (20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1 (21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1 (22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1 (23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1 (24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1 (25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1 (26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1 (27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1 (28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1 (29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1 (30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1 (31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1 (32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1 (33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1 (34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1 (35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1 (36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1 (37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1 (38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1 (39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1 (40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1 (41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1 (42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1 (43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1 (44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1 (45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1 (46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1 (47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1 (48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1 (49)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2 (1)
B-1	Am-241	3.550E-01	3.552E-01	DCF2 (2)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2 (3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2 (4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2 (5)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2 (6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2 (7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2 (9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2 (10)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2 (12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2 (14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2 (15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2 (17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2 (18)
B-1	U-233	3.550E-02	3.552E-02	DCF2 (19)
B-1	U-234	3.480E-02	3.478E-02	DCF2 (20)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2 (21)
B-1	U-236	3.220E-02	3.219E-02	DCF2 (22)
B-1	U-238	2.960E-02	2.960E-02	DCF2 (23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3 (5)
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3 (6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3 (7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3 (9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3 (10)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (12)
D-1	Ra-228+D	2.552E-03	2.553E-03	DCF3 (13)
D-1	Tc-99	2.370E-06	2.368E-06	DCF3 (14)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.302E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.266E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.890E-04	1.887E-04	DCF3(19)
D-1	U-234	1.810E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(21)
D-1	U-236	1.740E-04	1.739E-04	DCF3(22)
D-1	U-238	1.670E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T (2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T (3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T (4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T (5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T (6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T (7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T (8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T (9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC(13)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU(13,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS(13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH(13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(16)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(16,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(19)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(19,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(22)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(22,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(22)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
RR017	Radii of shape factor array (used if FS = -1):				
RR017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
RR017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
RR017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
RR017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
RR017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
RR017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
RR017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
RR017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
RR017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
RR017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
RR017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
RR017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
RR017	Fractions of annular areas within AREA:				
RR017	Ring 1	not used	1.000E+00	---	FRACA (1)
RR017	Ring 2	not used	2.732E-01	---	FRACA (2)
RR017	Ring 3	not used	0.000E+00	---	FRACA (3)
RR017	Ring 4	not used	0.000E+00	---	FRACA (4)
RR017	Ring 5	not used	0.000E+00	---	FRACA (5)
RR017	Ring 6	not used	0.000E+00	---	FRACA (6)
RR017	Ring 7	not used	0.000E+00	---	FRACA (7)
RR017	Ring 8	not used	0.000E+00	---	FRACA (8)
RR017	Ring 9	not used	0.000E+00	---	FRACA (9)
RR017	Ring 10	not used	0.000E+00	---	FRACA(10)
RR017	Ring 11	not used	0.000E+00	---	FRACA(11)
RR017	Ring 12	not used	0.000E+00	---	FRACA(12)
RR018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET(1)
RR018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET(2)
RR018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET(3)
RR018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET(4)
RR018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
RR018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
RR018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
RR018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
RR018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
RR018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
RR018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
RR018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
RR018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
RR018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
RR018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
RR018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
RR019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
RR019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
RR019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
RR019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
RR019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDELA_AUGUST3-2010_RFFACTORS-KD.RAD

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 20000.00 square meters	Am-241	1.000E+00
Thickness: 0.15 meters	Cs-137	1.000E+00
Cover Depth: 0.00 meters	Np-237	1.000E+00
	Pu-238	1.000E+00
	Pu-239	1.000E+00
	Pu-240	1.000E+00
	Tc-99	1.000E+00
	Th-228	1.000E+00
	Th-230	1.000E+00
	Th-232	1.000E+00
	U-234	1.000E+00
	U-235	1.000E+00
	U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.114E+01	1.044E+01	1.740E+01	1.691E+01	1.735E+01	1.818E+01
M(t):	1.114E+01	1.044E+01	1.740E+01	1.691E+01	1.735E+01	1.818E+01

Maximum TDOSE(t): 1.818E+01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.015E-02	0.0027	1.278E-04	0.0000	0.000E+00	0.0000	1.558E-02	0.0014	5.717E-03	0.0005	6.311E-04	0.0001	2.591E-02	0.0023
Cs-137	2.274E+00	0.2041	5.129E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0036	2.563E-01	0.0230	1.886E-01	0.0169	1.666E-03	0.0001
Np-237	7.719E-01	0.0693	6.662E-05	0.0000	0.000E+00	0.0000	1.722E-01	0.0155	6.839E-02	0.0061	9.437E-04	0.0001	1.436E-02	0.0013
Pu-238	9.534E-05	0.0000	1.461E-04	0.0000	0.000E+00	0.0000	1.786E-02	0.0016	1.311E-02	0.0012	3.618E-04	0.0000	2.970E-02	0.0027
Pu-239	2.054E-04	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Pu-240	9.266E-05	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Tc-99	7.626E-05	0.0000	1.507E-08	0.0000	0.000E+00	0.0000	2.182E-01	0.0196	7.221E-04	0.0001	1.968E-02	0.0018	7.220E-05	0.0000
Th-228	5.334E+00	0.4787	4.879E-05	0.0000	0.000E+00	0.0000	9.371E-03	0.0008	6.878E-03	0.0006	9.491E-04	0.0001	1.558E-02	0.0014
Th-230	2.431E-03	0.0002	1.333E-04	0.0000	0.000E+00	0.0000	1.655E-02	0.0015	1.205E-02	0.0011	1.768E-03	0.0002	2.723E-02	0.0024
Th-232	2.703E-01	0.0243	1.483E-04	0.0000	0.000E+00	0.0000	1.348E-01	0.0121	3.670E-02	0.0033	7.254E-02	0.0065	3.512E-02	0.0032
U-234	2.774E-04	0.0000	1.253E-05	0.0000	0.000E+00	0.0000	9.508E-03	0.0009	9.569E-03	0.0009	4.660E-02	0.0042	6.337E-03	0.0006
U-235	5.381E-01	0.0483	1.134E-05	0.0000	0.000E+00	0.0000	9.212E-03	0.0008	9.286E-03	0.0008	4.512E-02	0.0040	6.137E-03	0.0006
U-238	1.139E-01	0.0102	1.067E-05	0.0000	0.000E+00	0.0000	9.434E-03	0.0008	9.495E-03	0.0009	4.624E-02	0.0041	6.288E-03	0.0006
Total	9.336E+00	0.8378	1.025E-03	0.0001	0.000E+00	0.0000	6.916E-01	0.0621	4.568E-01	0.0410	4.242E-01	0.0381	2.332E-01	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.811E-02	0.0070
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.2478
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.028E+00	0.0922
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.127E-02	0.0055
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.696E-02	0.0060
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.685E-02	0.0060
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.387E-01	0.0214
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.367E+00	0.4817
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.017E-02	0.0054
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.496E-01	0.0493
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.230E-02	0.0065
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.0545
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-01	0.0166
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.114E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDE\LA_AUGUST3-2010_RFFACTORS-KD.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.010E-02	0.0029	1.276E-04	0.0000	0.000E+00	0.0000	1.555E-02	0.0015	5.708E-03	0.0005	6.301E-04	0.0001	2.586E-02	0.0025
Cs-137	2.221E+00	0.2127	5.009E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0037	2.503E-01	0.0240	1.842E-01	0.0176	1.627E-03	0.0002
Np-237	7.706E-01	0.0738	6.650E-05	0.0000	0.000E+00	0.0000	1.719E-01	0.0165	6.828E-02	0.0065	9.424E-04	0.0001	1.434E-02	0.0014
Pu-238	9.457E-05	0.0000	1.449E-04	0.0000	0.000E+00	0.0000	1.771E-02	0.0017	1.300E-02	0.0012	3.590E-04	0.0000	2.946E-02	0.0028
Pu-239	2.054E-04	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Pu-240	9.263E-05	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Tc-99	5.725E-05	0.0000	1.131E-08	0.0000	0.000E+00	0.0000	1.641E-01	0.0157	5.464E-04	0.0001	1.486E-02	0.0014	5.420E-05	0.0000
Th-228	3.713E+00	0.3555	3.396E-05	0.0000	0.000E+00	0.0000	6.523E-03	0.0006	4.787E-03	0.0005	6.606E-04	0.0001	1.085E-02	0.0010
Th-230	5.576E-03	0.0005	1.333E-04	0.0000	0.000E+00	0.0000	1.695E-02	0.0016	1.215E-02	0.0012	2.003E-03	0.0002	2.725E-02	0.0026
Th-232	9.039E-01	0.0865	1.525E-04	0.0000	0.000E+00	0.0000	3.638E-01	0.0348	8.566E-02	0.0082	2.075E-01	0.0199	4.530E-02	0.0043
U-234	2.769E-04	0.0000	1.251E-05	0.0000	0.000E+00	0.0000	9.491E-03	0.0009	9.552E-03	0.0009	4.652E-02	0.0045	6.326E-03	0.0006
U-235	5.371E-01	0.0514	1.133E-05	0.0000	0.000E+00	0.0000	9.207E-03	0.0009	9.314E-03	0.0009	4.504E-02	0.0043	6.128E-03	0.0006
U-238	1.137E-01	0.0109	1.065E-05	0.0000	0.000E+00	0.0000	9.418E-03	0.0009	9.479E-03	0.0009	4.616E-02	0.0044	6.277E-03	0.0006
Total	8.296E+00	0.7943	1.013E-03	0.0001	0.000E+00	0.0000	8.626E-01	0.0826	4.974E-01	0.0476	5.497E-01	0.0526	2.383E-01	0.0228

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.798E-02	0.0075
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.2582
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E+00	0.0982
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.077E-02	0.0058
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.694E-02	0.0064
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.682E-02	0.0064
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E-01	0.0172
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E+00	0.3577
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.406E-02	0.0061
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.606E+00	0.1538
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.218E-02	0.0069
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.0581
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.851E-01	0.0177
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.044E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDE\LA_AUGUST3-2010_RFFACTORS-KD.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.775E-02	0.0016	1.176E-04	0.0000	0.000E+00	0.0000	1.434E-02	0.0008	5.262E-03	0.0003	5.807E-04	0.0000	2.384E-02	0.0014
Cs-137	7.015E-01	0.0403	1.582E-08	0.0000	0.000E+00	0.0000	1.232E-02	0.0007	7.904E-02	0.0045	5.817E-02	0.0033	5.138E-04	0.0000
Np-237	7.101E-01	0.0408	6.128E-05	0.0000	0.000E+00	0.0000	1.584E-01	0.0091	6.292E-02	0.0036	8.779E-04	0.0001	1.321E-02	0.0008
Pu-238	6.358E-05	0.0000	9.736E-05	0.0000	0.000E+00	0.0000	1.190E-02	0.0007	8.738E-03	0.0005	2.463E-04	0.0000	1.980E-02	0.0011
Pu-239	2.030E-04	0.0000	1.581E-04	0.0000	0.000E+00	0.0000	1.925E-02	0.0011	1.413E-02	0.0008	3.900E-04	0.0000	3.202E-02	0.0018
Pu-240	9.119E-05	0.0000	1.574E-04	0.0000	0.000E+00	0.0000	1.918E-02	0.0011	1.408E-02	0.0008	3.885E-04	0.0000	3.189E-02	0.0018
Tc-99	4.512E-11	0.0000	8.916E-15	0.0000	0.000E+00	0.0000	1.293E-07	0.0000	4.307E-10	0.0000	1.171E-08	0.0000	4.272E-11	0.0000
Th-228	7.222E-08	0.0000	6.607E-13	0.0000	0.000E+00	0.0000	1.269E-10	0.0000	9.312E-11	0.0000	1.285E-11	0.0000	2.110E-10	0.0000
Th-230	1.570E-01	0.0090	1.334E-04	0.0000	0.000E+00	0.0000	5.085E-02	0.0029	2.557E-02	0.0015	2.264E-02	0.0013	3.055E-02	0.0018
Th-232	1.024E+01	0.5888	2.254E-04	0.0000	0.000E+00	0.0000	2.157E+00	0.1240	4.752E-01	0.0273	1.258E+00	0.0723	1.371E-01	0.0079
U-234	2.891E-04	0.0000	1.154E-05	0.0000	0.000E+00	0.0000	8.724E-03	0.0005	8.774E-03	0.0005	4.269E-02	0.0025	5.818E-03	0.0003
U-235	4.939E-01	0.0284	1.097E-05	0.0000	0.000E+00	0.0000	9.119E-03	0.0005	1.065E-02	0.0006	4.137E-02	0.0024	5.796E-03	0.0003
U-238	1.044E-01	0.0060	9.776E-06	0.0000	0.000E+00	0.0000	8.646E-03	0.0005	8.701E-03	0.0005	4.237E-02	0.0024	5.762E-03	0.0003
Total	1.244E+01	0.7150	9.829E-04	0.0001	0.000E+00	0.0000	2.470E+00	0.1420	7.130E-01	0.0410	1.468E+00	0.0844	3.063E-01	0.0176

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.188E-02	0.0041
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.516E-01	0.0490
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.455E-01	0.0544
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.085E-02	0.0023
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.616E-02	0.0038
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.579E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.415E-07	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.267E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.868E-01	0.0165
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.427E+01	0.8203
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.631E-02	0.0038
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.608E-01	0.0322
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.699E-01	0.0098
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDE\LA_AUGUST3-2010_RFFACTORS-KD.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.554E-02	0.0015	1.082E-04	0.0000	0.000E+00	0.0000	1.319E-02	0.0008	4.842E-03	0.0003	5.343E-04	0.0000	2.193E-02	0.0013
Cs-137	2.164E-01	0.0128	4.880E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0002	2.438E-02	0.0014	1.794E-02	0.0011	1.585E-04	0.0000
Np-237	6.532E-01	0.0386	5.638E-05	0.0000	0.000E+00	0.0000	1.457E-01	0.0086	5.788E-02	0.0034	8.166E-04	0.0000	1.216E-02	0.0007
Pu-238	4.242E-05	0.0000	6.490E-05	0.0000	0.000E+00	0.0000	7.936E-03	0.0005	5.825E-03	0.0003	1.689E-04	0.0000	1.320E-02	0.0008
Pu-239	2.005E-04	0.0000	1.562E-04	0.0000	0.000E+00	0.0000	1.902E-02	0.0011	1.396E-02	0.0008	3.853E-04	0.0000	3.163E-02	0.0019
Pu-240	8.975E-05	0.0000	1.549E-04	0.0000	0.000E+00	0.0000	1.888E-02	0.0011	1.385E-02	0.0008	3.824E-04	0.0000	3.139E-02	0.0019
Tc-99	2.670E-17	0.0000	5.275E-21	0.0000	0.000E+00	0.0000	7.651E-14	0.0000	2.548E-16	0.0000	6.928E-15	0.0000	2.527E-17	0.0000
Th-228	9.779E-16	0.0000	8.945E-21	0.0000	0.000E+00	0.0000	1.718E-18	0.0000	1.261E-18	0.0000	1.740E-19	0.0000	2.857E-18	0.0000
Th-230	3.063E-01	0.0181	1.336E-04	0.0000	0.000E+00	0.0000	9.600E-02	0.0057	4.599E-02	0.0027	5.040E-02	0.0030	3.577E-02	0.0021
Th-232	1.026E+01	0.6065	2.252E-04	0.0000	0.000E+00	0.0000	2.158E+00	0.1276	4.754E-01	0.0281	1.259E+00	0.0744	1.371E-01	0.0081
U-234	3.654E-04	0.0000	1.063E-05	0.0000	0.000E+00	0.0000	8.024E-03	0.0005	8.054E-03	0.0005	3.913E-02	0.0023	5.344E-03	0.0003
U-235	4.539E-01	0.0268	1.092E-05	0.0000	0.000E+00	0.0000	9.116E-03	0.0005	1.187E-02	0.0007	3.794E-02	0.0022	5.543E-03	0.0003
U-238	9.564E-02	0.0057	8.959E-06	0.0000	0.000E+00	0.0000	7.923E-03	0.0005	7.974E-03	0.0005	3.883E-02	0.0023	5.280E-03	0.0003
Total	1.201E+01	0.7100	9.300E-04	0.0001	0.000E+00	0.0000	2.487E+00	0.1471	6.700E-01	0.0396	1.445E+00	0.0855	2.995E-01	0.0177

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.615E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.0155
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.698E-01	0.0514
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.723E-02	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.536E-02	0.0039
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.475E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.374E-14	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.839E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.346E-01	0.0316
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.428E+01	0.8447
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.093E-02	0.0036
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.0307
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-01	0.0092
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.691E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDE\LA_AUGUST3-2010_RFFACTORS-KD.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.316E-02	0.0008	5.559E-05	0.0000	0.000E+00	0.0000	6.787E-03	0.0004	2.491E-03	0.0001	2.745E-04	0.0000	1.127E-02	0.0006
Cs-137	1.774E-05	0.0000	3.999E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
Np-237	3.350E-01	0.0193	2.893E-05	0.0000	0.000E+00	0.0000	7.473E-02	0.0043	2.969E-02	0.0017	4.549E-04	0.0000	6.241E-03	0.0004
Pu-238	2.254E-06	0.0000	2.531E-06	0.0000	0.000E+00	0.0000	3.110E-04	0.0000	2.287E-04	0.0000	1.465E-05	0.0000	5.152E-04	0.0000
Pu-239	1.822E-04	0.0000	1.418E-04	0.0000	0.000E+00	0.0000	1.727E-02	0.0010	1.267E-02	0.0007	3.498E-04	0.0000	2.872E-02	0.0017
Pu-240	7.900E-05	0.0000	1.364E-04	0.0000	0.000E+00	0.0000	1.661E-02	0.0010	1.219E-02	0.0007	3.369E-04	0.0000	2.763E-02	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.325E+00	0.0764	1.349E-04	0.0000	0.000E+00	0.0000	4.258E-01	0.0245	1.986E-01	0.0114	2.536E-01	0.0146	7.491E-02	0.0043
Th-232	1.011E+01	0.5825	2.220E-04	0.0000	0.000E+00	0.0000	2.126E+00	0.1226	4.685E-01	0.0270	1.240E+00	0.0715	1.351E-01	0.0078
U-234	2.508E-03	0.0001	5.621E-06	0.0000	0.000E+00	0.0000	4.726E-03	0.0003	4.345E-03	0.0003	1.985E-02	0.0011	2.803E-03	0.0002
U-235	2.342E-01	0.0135	1.075E-05	0.0000	0.000E+00	0.0000	8.975E-03	0.0005	1.792E-02	0.0010	1.910E-02	0.0011	4.156E-03	0.0002
U-238	4.751E-02	0.0027	4.456E-06	0.0000	0.000E+00	0.0000	3.941E-03	0.0002	3.966E-03	0.0002	1.931E-02	0.0011	2.626E-03	0.0002
Total	1.206E+01	0.6954	7.429E-04	0.0000	0.000E+00	0.0000	2.686E+00	0.1548	7.505E-01	0.0433	1.554E+00	0.0896	2.940E-01	0.0169

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.404E-02	0.0020
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.461E-01	0.0257
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-03	0.0001
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.933E-02	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.699E-02	0.0033
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.278E+00	0.1313
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.408E+01	0.8114
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.424E-02	0.0020
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E-01	0.0164
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.736E-02	0.0045
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDE\LA_AUGUST3-2010_RFFACTORS-KD.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.748E-03	0.0003	2.418E-05	0.0000	0.000E+00	0.0000	2.957E-03	0.0002	1.085E-03	0.0001	1.194E-04	0.0000	4.900E-03	0.0003
Cs-137	1.383E-10	0.0000	3.119E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
Np-237	1.454E-01	0.0080	1.258E-05	0.0000	0.000E+00	0.0000	3.243E-02	0.0018	1.289E-02	0.0007	2.165E-04	0.0000	2.715E-03	0.0001
Pu-238	1.996E-06	0.0000	4.492E-08	0.0000	0.000E+00	0.0000	6.711E-06	0.0000	4.957E-06	0.0000	4.078E-06	0.0000	9.495E-06	0.0000
Pu-239	1.615E-04	0.0000	1.256E-04	0.0000	0.000E+00	0.0000	1.530E-02	0.0008	1.123E-02	0.0006	3.100E-04	0.0000	2.545E-02	0.0014
Pu-240	6.735E-05	0.0000	1.163E-04	0.0000	0.000E+00	0.0000	1.416E-02	0.0008	1.040E-02	0.0006	2.874E-04	0.0000	2.355E-02	0.0013
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.242E+00	0.1233	1.353E-04	0.0000	0.000E+00	0.0000	7.237E-01	0.0398	3.364E-01	0.0185	4.372E-01	0.0240	1.101E-01	0.0061
Th-232	9.923E+00	0.5457	2.179E-04	0.0000	0.000E+00	0.0000	2.088E+00	0.1148	4.600E-01	0.0253	1.218E+00	0.0670	1.327E-01	0.0073
U-234	6.675E-03	0.0004	2.746E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0002	2.654E-03	0.0001	9.360E-03	0.0005	1.456E-03	0.0001
U-235	1.067E-01	0.0059	1.004E-05	0.0000	0.000E+00	0.0000	8.369E-03	0.0005	1.997E-02	0.0011	8.224E-03	0.0005	3.193E-03	0.0002
U-238	1.982E-02	0.0011	1.862E-06	0.0000	0.000E+00	0.0000	1.647E-03	0.0001	1.657E-03	0.0001	8.066E-03	0.0004	1.097E-03	0.0001
Total	1.245E+01	0.6847	6.465E-04	0.0000	0.000E+00	0.0000	2.890E+00	0.1589	8.563E-01	0.0471	1.682E+00	0.0925	3.052E-01	0.0168

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.483E-02	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-01	0.0107
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.728E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.258E-02	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.859E-02	0.0027
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.850E+00	0.2117
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E+01	0.7601
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-02	0.0013
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.0081
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.229E-02	0.0018
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.818E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDE\LA_AUGUST3-2010_RFFACTORS-KD.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Am-241	Np-237+D	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Am-241	U-233	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
Am-241	Th-229+D	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Am-241	ΣDSR(j)		7.811E-02	7.798E-02	7.188E-02	6.615E-02	3.404E-02	1.483E-02
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Np-237+D	Np-237+D	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237+D	U-233	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
Np-237+D	Th-229+D	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Np-237+D	ΣDSR(j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.937E-01
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	U-234	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
Pu-238	Th-230	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Pu-238	Ra-226+D	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Pu-238	Pb-210+D	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pu-238	ΣDSR(j)		6.127E-02	6.077E-02	4.085E-02	2.723E-02	1.074E-03	2.728E-05
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-239	U-235+D	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
Pu-239	Pa-231	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pu-239	Ac-227+D	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Pu-239	ΣDSR(j)		6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	U-236	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Pu-240	Th-232	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Pu-240	Ra-228+D	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Pu-240	Th-228+D	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Pu-240	ΣDSR(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	Ra-226+D	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Th-230	Pb-210+D	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Th-230	ΣDSR(j)		6.017E-02	6.406E-02	2.868E-01	5.346E-01	2.278E+00	3.850E+00

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDE\LA_AUGUST3-2010_RFFACTORS-KD.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	Ra-228+D	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-232	Th-228+D	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-232	∑DSR(j)		5.496E-01	1.606E+00	1.427E+01	1.428E+01	1.408E+01	1.382E+01
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
U-234	Pb-210+D	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
U-234	∑DSR(j)		7.230E-02	7.218E-02	6.631E-02	6.093E-02	3.424E-02	2.393E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.844E-01	1.465E-01
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238+D	U-238+D	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238+D	U-234	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
U-238+D	Pb-210+D	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
U-238+D	∑DSR(j)		1.854E-01	1.851E-01	1.699E-01	1.557E-01	7.736E-02	3.229E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDELA_AUGUST3-2010_RFFACTORS-KD.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	1.280E+01	1.282E+01	1.391E+01	1.512E+01	2.938E+01	6.741E+01
Cs-137	3.622E-01	3.708E-01	1.174E+00	3.807E+00	4.645E+04	5.956E+09
Np-237	9.729E-01	9.745E-01	1.058E+00	1.150E+00	2.242E+00	5.163E+00
Pu-238	1.632E+01	1.645E+01	2.448E+01	3.672E+01	9.308E+02	3.665E+04
Pu-239	1.493E+01	1.494E+01	1.512E+01	1.530E+01	1.685E+01	1.902E+01
Pu-240	1.496E+01	1.496E+01	1.520E+01	1.544E+01	1.755E+01	2.058E+01
Tc-99	4.189E+00	5.569E+00	7.065E+06	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	1.863E-01	2.677E-01	1.376E+07	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	1.662E+01	1.561E+01	3.487E+00	1.871E+00	4.390E-01	2.597E-01
Th-232	1.819E+00	6.225E-01	7.007E-02	7.001E-02	7.104E-02	7.235E-02
U-234	1.383E+01	1.386E+01	1.508E+01	1.641E+01	2.921E+01	4.179E+01
U-235	1.645E+00	1.648E+00	1.783E+00	1.929E+00	3.517E+00	6.825E+00
U-238	5.394E+00	5.404E+00	5.887E+00	6.424E+00	1.293E+01	3.097E+01

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	7.811E-02	1.280E+01	1.483E-02	6.741E+01
Cs-137	1.000E+00	0.000E+00	2.761E+00	3.622E-01	1.679E-10	5.956E+09
Np-237	1.000E+00	0.000E+00	1.028E+00	9.729E-01	1.937E-01	5.163E+00
Pu-238	1.000E+00	0.000E+00	6.127E-02	1.632E+01	2.728E-05	3.665E+04
Pu-239	1.000E+00	0.000E+00	6.696E-02	1.493E+01	5.258E-02	1.902E+01
Pu-240	1.000E+00	0.000E+00	6.685E-02	1.496E+01	4.859E-02	2.058E+01
Tc-99	1.000E+00	0.000E+00	2.387E-01	4.189E+00	0.000E+00	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.367E+00	1.863E-01	0.000E+00	*8.195E+14
Th-230	1.000E+00	1.000E+03	3.850E+00	2.597E-01	3.850E+00	2.597E-01
Th-232	1.000E+00	68.1 ± 0.1	1.430E+01	6.995E-02	1.382E+01	7.235E-02
U-234	1.000E+00	0.000E+00	7.230E-02	1.383E+01	2.393E-02	4.179E+01
U-235	1.000E+00	0.000E+00	6.078E-01	1.645E+00	1.465E-01	6.825E+00
U-238	1.000E+00	0.000E+00	1.854E-01	5.394E+00	3.229E-02	3.097E+01

*At specific activity limit

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDELA_AUGUST3-2010_RFFACTORS-KD.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Np-237	Am-241	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Np-237	Np-237	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237	∑DOSE (j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.936E-01
U-233	Am-241	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
U-233	Np-237	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
U-233	∑DOSE (j)		1.816E-07	5.165E-07	1.546E-05	2.824E-05	7.089E-05	6.023E-05
Th-229	Am-241	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Th-229	Np-237	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Th-229	∑DOSE (j)		8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.693E-05	8.629E-05
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	∑DOSE (j)		6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
U-234	Pu-238	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	U-238	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-234	∑DOSE (j)		7.230E-02	7.218E-02	6.625E-02	6.071E-02	3.017E-02	1.258E-02
Th-230	Pu-238	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	∑DOSE (j)		5.826E-02	5.826E-02	5.815E-02	5.805E-02	5.712E-02	5.590E-02
Ra-226	Pu-238	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Ra-226	Th-230	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Ra-226	U-234	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
Ra-226	U-238	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
Ra-226	∑DOSE (j)		1.903E-03	5.744E-03	1.908E-01	3.732E-01	1.620E+00	2.746E+00
Pb-210	Pu-238	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pb-210	Th-230	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Pb-210	U-234	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
Pb-210	U-238	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
Pb-210	∑DOSE (j)		9.109E-06	5.881E-05	3.788E-02	1.036E-01	6.051E-01	1.060E+00
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
U-235	Pu-239	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235	∑DOSE (j)		6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDE\LA_AUGUST3-2010_RFFACTORS-KD.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pa-231	U-235	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Pa-231	ΣDOSE (j)		2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Ac-227	Pu-239	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Ac-227	ΣDOSE (j)		2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	ΣDOSE (j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
U-236	Pu-240	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Th-232	Pu-240	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	ΣDOSE (j)		6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Ra-228	Pu-240	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Ra-228	Th-232	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Ra-228	ΣDOSE (j)		4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-228	Pu-240	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Th-228	Th-228	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-228	ΣDOSE (j)		5.409E+00	3.991E+00	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238	U-238	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238	ΣDOSE (j)		1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ALFOROUTSIDE\LA_AUGUST3-2010_RFFACTORS-KD.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 66.68 seconds

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1(51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1(54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1(55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1(57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1(60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2(1)
B-1	Am-241	3.550E-01	3.552E-01	DCF2(2)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2(3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2(4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(5)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2(6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2(7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2(9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2(10)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2(12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2(13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2(14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2(15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2(16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2(18)
B-1	U-233	3.550E-02	3.552E-02	DCF2(19)
B-1	U-234	3.480E-02	3.478E-02	DCF2(20)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2(21)
B-1	U-236	3.220E-02	3.219E-02	DCF2(22)
B-1	U-238	2.960E-02	2.960E-02	DCF2(23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3(2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3(4)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3(5)
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3(6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3(7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3(9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3(10)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3(12)
D-1	Ra-228+D	2.552E-03	2.553E-03	DCF3(13)
D-1	Tc-99	2.370E-06	2.368E-06	DCF3(14)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.302E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.266E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.890E-04	1.887E-04	DCF3(19)
D-1	U-234	1.810E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(21)
D-1	U-236	1.740E-04	1.739E-04	DCF3(22)
D-1	U-238	1.670E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV (1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV (3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE (1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE (2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE (3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV (1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV (2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV (3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY (1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY (2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY (3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET (1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET (2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET (3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 20000.00 square meters	Am-241	1.000E+00
Thickness: 0.15 meters	Cs-137	1.000E+00
Cover Depth: 0.00 meters	Np-237	1.000E+00
	Pu-238	1.000E+00
	Pu-239	1.000E+00
	Pu-240	1.000E+00
	Tc-99	1.000E+00
	Th-228	1.000E+00
	Th-230	1.000E+00
	Th-232	1.000E+00
	U-234	1.000E+00
	U-235	1.000E+00
	U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.114E+01	1.044E+01	1.740E+01	1.691E+01	1.735E+01	1.818E+01
M(t):	7.429E-01	6.963E-01	1.160E+00	1.127E+00	1.157E+00	1.212E+00

Maximum TDOSE(t): 1.818E+01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.015E-02	0.0027	1.278E-04	0.0000	0.000E+00	0.0000	1.558E-02	0.0014	5.717E-03	0.0005	6.311E-04	0.0001	2.591E-02	0.0023
Cs-137	2.274E+00	0.2041	5.129E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0036	2.563E-01	0.0230	1.886E-01	0.0169	1.666E-03	0.0001
Np-237	7.719E-01	0.0693	6.662E-05	0.0000	0.000E+00	0.0000	1.722E-01	0.0155	6.839E-02	0.0061	9.437E-04	0.0001	1.436E-02	0.0013
Pu-238	9.534E-05	0.0000	1.461E-04	0.0000	0.000E+00	0.0000	1.786E-02	0.0016	1.311E-02	0.0012	3.618E-04	0.0000	2.970E-02	0.0027
Pu-239	2.054E-04	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Pu-240	9.266E-05	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Tc-99	7.626E-05	0.0000	1.507E-08	0.0000	0.000E+00	0.0000	2.182E-01	0.0196	7.221E-04	0.0001	1.968E-02	0.0018	7.220E-05	0.0000
Th-228	5.334E+00	0.4787	4.879E-05	0.0000	0.000E+00	0.0000	9.371E-03	0.0008	6.878E-03	0.0006	9.491E-04	0.0001	1.558E-02	0.0014
Th-230	2.431E-03	0.0002	1.333E-04	0.0000	0.000E+00	0.0000	1.655E-02	0.0015	1.205E-02	0.0011	1.768E-03	0.0002	2.723E-02	0.0024
Th-232	2.703E-01	0.0243	1.483E-04	0.0000	0.000E+00	0.0000	1.348E-01	0.0121	3.670E-02	0.0033	7.254E-02	0.0065	3.512E-02	0.0032
U-234	2.774E-04	0.0000	1.253E-05	0.0000	0.000E+00	0.0000	9.508E-03	0.0009	9.569E-03	0.0009	4.660E-02	0.0042	6.337E-03	0.0006
U-235	5.381E-01	0.0483	1.134E-05	0.0000	0.000E+00	0.0000	9.212E-03	0.0008	9.286E-03	0.0008	4.512E-02	0.0040	6.137E-03	0.0006
U-238	1.139E-01	0.0102	1.067E-05	0.0000	0.000E+00	0.0000	9.434E-03	0.0008	9.495E-03	0.0009	4.624E-02	0.0041	6.288E-03	0.0006
Total	9.336E+00	0.8378	1.025E-03	0.0001	0.000E+00	0.0000	6.916E-01	0.0621	4.568E-01	0.0410	4.242E-01	0.0381	2.332E-01	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.811E-02	0.0070
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.2478
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.028E+00	0.0922
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.127E-02	0.0055
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.696E-02	0.0060
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.685E-02	0.0060
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.387E-01	0.0214
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.367E+00	0.4817
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.017E-02	0.0054
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.496E-01	0.0493
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.230E-02	0.0065
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.0545
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-01	0.0166
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.114E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.010E-02	0.0029	1.276E-04	0.0000	0.000E+00	0.0000	1.555E-02	0.0015	5.708E-03	0.0005	6.301E-04	0.0001	2.586E-02	0.0025
Cs-137	2.221E+00	0.2127	5.009E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0037	2.503E-01	0.0240	1.842E-01	0.0176	1.627E-03	0.0002
Np-237	7.706E-01	0.0738	6.650E-05	0.0000	0.000E+00	0.0000	1.719E-01	0.0165	6.828E-02	0.0065	9.424E-04	0.0001	1.434E-02	0.0014
Pu-238	9.457E-05	0.0000	1.449E-04	0.0000	0.000E+00	0.0000	1.771E-02	0.0017	1.300E-02	0.0012	3.590E-04	0.0000	2.946E-02	0.0028
Pu-239	2.054E-04	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Pu-240	9.263E-05	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Tc-99	5.725E-05	0.0000	1.131E-08	0.0000	0.000E+00	0.0000	1.641E-01	0.0157	5.464E-04	0.0001	1.486E-02	0.0014	5.420E-05	0.0000
Th-228	3.713E+00	0.3555	3.396E-05	0.0000	0.000E+00	0.0000	6.523E-03	0.0006	4.787E-03	0.0005	6.606E-04	0.0001	1.085E-02	0.0010
Th-230	5.576E-03	0.0005	1.333E-04	0.0000	0.000E+00	0.0000	1.695E-02	0.0016	1.215E-02	0.0012	2.003E-03	0.0002	2.725E-02	0.0026
Th-232	9.039E-01	0.0865	1.525E-04	0.0000	0.000E+00	0.0000	3.638E-01	0.0348	8.566E-02	0.0082	2.075E-01	0.0199	4.530E-02	0.0043
U-234	2.769E-04	0.0000	1.251E-05	0.0000	0.000E+00	0.0000	9.491E-03	0.0009	9.552E-03	0.0009	4.652E-02	0.0045	6.326E-03	0.0006
U-235	5.371E-01	0.0514	1.133E-05	0.0000	0.000E+00	0.0000	9.207E-03	0.0009	9.314E-03	0.0009	4.504E-02	0.0043	6.128E-03	0.0006
U-238	1.137E-01	0.0109	1.065E-05	0.0000	0.000E+00	0.0000	9.418E-03	0.0009	9.479E-03	0.0009	4.616E-02	0.0044	6.277E-03	0.0006
Total	8.296E+00	0.7943	1.013E-03	0.0001	0.000E+00	0.0000	8.626E-01	0.0826	4.974E-01	0.0476	5.497E-01	0.0526	2.383E-01	0.0228

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.798E-02	0.0075
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.2582
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E+00	0.0982
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.077E-02	0.0058
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.694E-02	0.0064
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.682E-02	0.0064
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E-01	0.0172
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E+00	0.3577
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.406E-02	0.0061
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.606E+00	0.1538
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.218E-02	0.0069
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.0581
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.851E-01	0.0177
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.044E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.775E-02	0.0016	1.176E-04	0.0000	0.000E+00	0.0000	1.434E-02	0.0008	5.262E-03	0.0003	5.807E-04	0.0000	2.384E-02	0.0014
Cs-137	7.015E-01	0.0403	1.582E-08	0.0000	0.000E+00	0.0000	1.232E-02	0.0007	7.904E-02	0.0045	5.817E-02	0.0033	5.138E-04	0.0000
Np-237	7.101E-01	0.0408	6.128E-05	0.0000	0.000E+00	0.0000	1.584E-01	0.0091	6.292E-02	0.0036	8.779E-04	0.0001	1.321E-02	0.0008
Pu-238	6.358E-05	0.0000	9.736E-05	0.0000	0.000E+00	0.0000	1.190E-02	0.0007	8.738E-03	0.0005	2.463E-04	0.0000	1.980E-02	0.0011
Pu-239	2.030E-04	0.0000	1.581E-04	0.0000	0.000E+00	0.0000	1.925E-02	0.0011	1.413E-02	0.0008	3.900E-04	0.0000	3.202E-02	0.0018
Pu-240	9.119E-05	0.0000	1.574E-04	0.0000	0.000E+00	0.0000	1.918E-02	0.0011	1.408E-02	0.0008	3.885E-04	0.0000	3.189E-02	0.0018
Tc-99	4.512E-11	0.0000	8.916E-15	0.0000	0.000E+00	0.0000	1.293E-07	0.0000	4.307E-10	0.0000	1.171E-08	0.0000	4.272E-11	0.0000
Th-228	7.222E-08	0.0000	6.607E-13	0.0000	0.000E+00	0.0000	1.269E-10	0.0000	9.312E-11	0.0000	1.285E-11	0.0000	2.110E-10	0.0000
Th-230	1.570E-01	0.0090	1.334E-04	0.0000	0.000E+00	0.0000	5.085E-02	0.0029	2.557E-02	0.0015	2.264E-02	0.0013	3.055E-02	0.0018
Th-232	1.024E+01	0.5888	2.254E-04	0.0000	0.000E+00	0.0000	2.157E+00	0.1240	4.752E-01	0.0273	1.258E+00	0.0723	1.371E-01	0.0079
U-234	2.891E-04	0.0000	1.154E-05	0.0000	0.000E+00	0.0000	8.724E-03	0.0005	8.774E-03	0.0005	4.269E-02	0.0025	5.818E-03	0.0003
U-235	4.939E-01	0.0284	1.097E-05	0.0000	0.000E+00	0.0000	9.119E-03	0.0005	1.065E-02	0.0006	4.137E-02	0.0024	5.796E-03	0.0003
U-238	1.044E-01	0.0060	9.776E-06	0.0000	0.000E+00	0.0000	8.646E-03	0.0005	8.701E-03	0.0005	4.237E-02	0.0024	5.762E-03	0.0003
Total	1.244E+01	0.7150	9.829E-04	0.0001	0.000E+00	0.0000	2.470E+00	0.1420	7.130E-01	0.0410	1.468E+00	0.0844	3.063E-01	0.0176

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.188E-02	0.0041
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.516E-01	0.0490
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.455E-01	0.0544
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.085E-02	0.0023
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.616E-02	0.0038
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.579E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.415E-07	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.267E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.868E-01	0.0165
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.427E+01	0.8203
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.631E-02	0.0038
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.608E-01	0.0322
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.699E-01	0.0098
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.554E-02	0.0015	1.082E-04	0.0000	0.000E+00	0.0000	1.319E-02	0.0008	4.842E-03	0.0003	5.343E-04	0.0000	2.193E-02	0.0013
Cs-137	2.164E-01	0.0128	4.880E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0002	2.438E-02	0.0014	1.794E-02	0.0011	1.585E-04	0.0000
Np-237	6.532E-01	0.0386	5.638E-05	0.0000	0.000E+00	0.0000	1.457E-01	0.0086	5.788E-02	0.0034	8.166E-04	0.0000	1.216E-02	0.0007
Pu-238	4.242E-05	0.0000	6.490E-05	0.0000	0.000E+00	0.0000	7.936E-03	0.0005	5.825E-03	0.0003	1.689E-04	0.0000	1.320E-02	0.0008
Pu-239	2.005E-04	0.0000	1.562E-04	0.0000	0.000E+00	0.0000	1.902E-02	0.0011	1.396E-02	0.0008	3.853E-04	0.0000	3.163E-02	0.0019
Pu-240	8.975E-05	0.0000	1.549E-04	0.0000	0.000E+00	0.0000	1.888E-02	0.0011	1.385E-02	0.0008	3.824E-04	0.0000	3.139E-02	0.0019
Tc-99	2.670E-17	0.0000	5.275E-21	0.0000	0.000E+00	0.0000	7.651E-14	0.0000	2.548E-16	0.0000	6.928E-15	0.0000	2.527E-17	0.0000
Th-228	9.779E-16	0.0000	8.945E-21	0.0000	0.000E+00	0.0000	1.718E-18	0.0000	1.261E-18	0.0000	1.740E-19	0.0000	2.857E-18	0.0000
Th-230	3.063E-01	0.0181	1.336E-04	0.0000	0.000E+00	0.0000	9.600E-02	0.0057	4.599E-02	0.0027	5.040E-02	0.0030	3.577E-02	0.0021
Th-232	1.026E+01	0.6065	2.252E-04	0.0000	0.000E+00	0.0000	2.158E+00	0.1276	4.754E-01	0.0281	1.259E+00	0.0744	1.371E-01	0.0081
U-234	3.654E-04	0.0000	1.063E-05	0.0000	0.000E+00	0.0000	8.024E-03	0.0005	8.054E-03	0.0005	3.913E-02	0.0023	5.344E-03	0.0003
U-235	4.539E-01	0.0268	1.092E-05	0.0000	0.000E+00	0.0000	9.116E-03	0.0005	1.187E-02	0.0007	3.794E-02	0.0022	5.543E-03	0.0003
U-238	9.564E-02	0.0057	8.959E-06	0.0000	0.000E+00	0.0000	7.923E-03	0.0005	7.974E-03	0.0005	3.883E-02	0.0023	5.280E-03	0.0003
Total	1.201E+01	0.7100	9.300E-04	0.0001	0.000E+00	0.0000	2.487E+00	0.1471	6.700E-01	0.0396	1.445E+00	0.0855	2.995E-01	0.0177

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.615E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.0155
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.698E-01	0.0514
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.723E-02	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.536E-02	0.0039
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.475E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.374E-14	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.839E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.346E-01	0.0316
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.428E+01	0.8447
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.093E-02	0.0036
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.0307
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-01	0.0092
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.691E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.316E-02	0.0008	5.559E-05	0.0000	0.000E+00	0.0000	6.787E-03	0.0004	2.491E-03	0.0001	2.745E-04	0.0000	1.127E-02	0.0006
Cs-137	1.774E-05	0.0000	3.999E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
Np-237	3.350E-01	0.0193	2.893E-05	0.0000	0.000E+00	0.0000	7.473E-02	0.0043	2.969E-02	0.0017	4.549E-04	0.0000	6.241E-03	0.0004
Pu-238	2.254E-06	0.0000	2.531E-06	0.0000	0.000E+00	0.0000	3.110E-04	0.0000	2.287E-04	0.0000	1.465E-05	0.0000	5.152E-04	0.0000
Pu-239	1.822E-04	0.0000	1.418E-04	0.0000	0.000E+00	0.0000	1.727E-02	0.0010	1.267E-02	0.0007	3.498E-04	0.0000	2.872E-02	0.0017
Pu-240	7.900E-05	0.0000	1.364E-04	0.0000	0.000E+00	0.0000	1.661E-02	0.0010	1.219E-02	0.0007	3.369E-04	0.0000	2.763E-02	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.325E+00	0.0764	1.349E-04	0.0000	0.000E+00	0.0000	4.258E-01	0.0245	1.986E-01	0.0114	2.536E-01	0.0146	7.491E-02	0.0043
Th-232	1.011E+01	0.5825	2.220E-04	0.0000	0.000E+00	0.0000	2.126E+00	0.1226	4.685E-01	0.0270	1.240E+00	0.0715	1.351E-01	0.0078
U-234	2.508E-03	0.0001	5.621E-06	0.0000	0.000E+00	0.0000	4.726E-03	0.0003	4.345E-03	0.0003	1.985E-02	0.0011	2.803E-03	0.0002
U-235	2.342E-01	0.0135	1.075E-05	0.0000	0.000E+00	0.0000	8.975E-03	0.0005	1.792E-02	0.0010	1.910E-02	0.0011	4.156E-03	0.0002
U-238	4.751E-02	0.0027	4.456E-06	0.0000	0.000E+00	0.0000	3.941E-03	0.0002	3.966E-03	0.0002	1.931E-02	0.0011	2.626E-03	0.0002
Total	1.206E+01	0.6954	7.429E-04	0.0000	0.000E+00	0.0000	2.686E+00	0.1548	7.505E-01	0.0433	1.554E+00	0.0896	2.940E-01	0.0169

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.404E-02	0.0020
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.461E-01	0.0257
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-03	0.0001
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.933E-02	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.699E-02	0.0033
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.278E+00	0.1313
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.408E+01	0.8114
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.424E-02	0.0020
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E-01	0.0164
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.736E-02	0.0045
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.748E-03	0.0003	2.418E-05	0.0000	0.000E+00	0.0000	2.957E-03	0.0002	1.085E-03	0.0001	1.194E-04	0.0000	4.900E-03	0.0003
Cs-137	1.383E-10	0.0000	3.119E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
Np-237	1.454E-01	0.0080	1.258E-05	0.0000	0.000E+00	0.0000	3.243E-02	0.0018	1.289E-02	0.0007	2.165E-04	0.0000	2.715E-03	0.0001
Pu-238	1.996E-06	0.0000	4.492E-08	0.0000	0.000E+00	0.0000	6.711E-06	0.0000	4.957E-06	0.0000	4.078E-06	0.0000	9.495E-06	0.0000
Pu-239	1.615E-04	0.0000	1.256E-04	0.0000	0.000E+00	0.0000	1.530E-02	0.0008	1.123E-02	0.0006	3.100E-04	0.0000	2.545E-02	0.0014
Pu-240	6.735E-05	0.0000	1.163E-04	0.0000	0.000E+00	0.0000	1.416E-02	0.0008	1.040E-02	0.0006	2.874E-04	0.0000	2.355E-02	0.0013
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.242E+00	0.1233	1.353E-04	0.0000	0.000E+00	0.0000	7.237E-01	0.0398	3.364E-01	0.0185	4.372E-01	0.0240	1.101E-01	0.0061
Th-232	9.923E+00	0.5457	2.179E-04	0.0000	0.000E+00	0.0000	2.088E+00	0.1148	4.600E-01	0.0253	1.218E+00	0.0670	1.327E-01	0.0073
U-234	6.675E-03	0.0004	2.746E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0002	2.654E-03	0.0001	9.360E-03	0.0005	1.456E-03	0.0001
U-235	1.067E-01	0.0059	1.004E-05	0.0000	0.000E+00	0.0000	8.369E-03	0.0005	1.997E-02	0.0011	8.224E-03	0.0005	3.193E-03	0.0002
U-238	1.982E-02	0.0011	1.862E-06	0.0000	0.000E+00	0.0000	1.647E-03	0.0001	1.657E-03	0.0001	8.066E-03	0.0004	1.097E-03	0.0001
Total	1.245E+01	0.6847	6.465E-04	0.0000	0.000E+00	0.0000	2.890E+00	0.1589	8.563E-01	0.0471	1.682E+00	0.0925	3.052E-01	0.0168

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.483E-02	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-01	0.0107
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.728E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.258E-02	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.859E-02	0.0027
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.850E+00	0.2117
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E+01	0.7601
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-02	0.0013
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.0081
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.229E-02	0.0018
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.818E+01	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
 Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Am-241	Np-237+D	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Am-241	U-233	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
Am-241	Th-229+D	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Am-241	ΣDSR(j)		7.811E-02	7.798E-02	7.188E-02	6.615E-02	3.404E-02	1.483E-02
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Np-237+D	Np-237+D	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237+D	U-233	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
Np-237+D	Th-229+D	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Np-237+D	ΣDSR(j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.937E-01
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	U-234	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
Pu-238	Th-230	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Pu-238	Ra-226+D	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Pu-238	Pb-210+D	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pu-238	ΣDSR(j)		6.127E-02	6.077E-02	4.085E-02	2.723E-02	1.074E-03	2.728E-05
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-239	U-235+D	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
Pu-239	Pa-231	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pu-239	Ac-227+D	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Pu-239	ΣDSR(j)		6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	U-236	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Pu-240	Th-232	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Pu-240	Ra-228+D	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Pu-240	Th-228+D	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Pu-240	ΣDSR(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	Ra-226+D	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Th-230	Pb-210+D	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Th-230	ΣDSR(j)		6.017E-02	6.406E-02	2.868E-01	5.346E-01	2.278E+00	3.850E+00

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	Ra-228+D	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-232	Th-228+D	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-232	∑DSR(j)		5.496E-01	1.606E+00	1.427E+01	1.428E+01	1.408E+01	1.382E+01
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
U-234	Pb-210+D	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
U-234	∑DSR(j)		7.230E-02	7.218E-02	6.631E-02	6.093E-02	3.424E-02	2.393E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.844E-01	1.465E-01
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238+D	U-238+D	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238+D	U-234	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
U-238+D	Pb-210+D	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
U-238+D	∑DSR(j)		1.854E-01	1.851E-01	1.699E-01	1.557E-01	7.736E-02	3.229E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	1.920E+02	1.924E+02	2.087E+02	2.267E+02	4.407E+02	1.011E+03
Cs-137	5.433E+00	5.563E+00	1.761E+01	5.710E+01	6.967E+05	8.934E+10
Np-237	1.459E+01	1.462E+01	1.586E+01	1.725E+01	3.362E+01	7.744E+01
Pu-238	2.448E+02	2.468E+02	3.672E+02	5.508E+02	1.396E+04	5.498E+05
Pu-239	2.240E+02	2.241E+02	2.267E+02	2.295E+02	2.528E+02	2.853E+02
Pu-240	2.244E+02	2.245E+02	2.280E+02	2.317E+02	2.632E+02	3.087E+02
Tc-99	6.283E+01	8.353E+01	1.060E+08	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	2.795E+00	4.015E+00	2.064E+08	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	2.493E+02	2.341E+02	5.230E+01	2.806E+01	6.584E+00	3.896E+00
Th-232	2.729E+01	9.338E+00	1.051E+00	1.050E+00	1.066E+00	1.085E+00
U-234	2.075E+02	2.078E+02	2.262E+02	2.462E+02	4.381E+02	6.268E+02
U-235	2.468E+01	2.472E+01	2.675E+01	2.894E+01	5.275E+01	1.024E+02
U-238	8.091E+01	8.105E+01	8.830E+01	9.637E+01	1.939E+02	4.646E+02

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	7.811E-02	1.920E+02	1.483E-02	1.011E+03
Cs-137	1.000E+00	0.000E+00	2.761E+00	5.433E+00	1.679E-10	8.934E+10
Np-237	1.000E+00	0.000E+00	1.028E+00	1.459E+01	1.937E-01	7.744E+01
Pu-238	1.000E+00	0.000E+00	6.127E-02	2.448E+02	2.728E-05	5.498E+05
Pu-239	1.000E+00	0.000E+00	6.696E-02	2.240E+02	5.258E-02	2.853E+02
Pu-240	1.000E+00	0.000E+00	6.685E-02	2.244E+02	4.859E-02	3.087E+02
Tc-99	1.000E+00	0.000E+00	2.387E-01	6.283E+01	0.000E+00	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.367E+00	2.795E+00	0.000E+00	*8.195E+14
Th-230	1.000E+00	1.000E+03	3.850E+00	3.896E+00	3.850E+00	3.896E+00
Th-232	1.000E+00	68.1 ± 0.1	1.430E+01	1.049E+00	1.382E+01	1.085E+00
U-234	1.000E+00	0.000E+00	7.230E-02	2.075E+02	2.393E-02	6.268E+02
U-235	1.000E+00	0.000E+00	6.078E-01	2.468E+01	1.465E-01	1.024E+02
U-238	1.000E+00	0.000E+00	1.854E-01	8.091E+01	3.229E-02	4.646E+02

*At specific activity limit

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Np-237	Am-241	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Np-237	Np-237	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237	∑DOSE (j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.936E-01
U-233	Am-241	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
U-233	Np-237	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
U-233	∑DOSE (j)		1.816E-07	5.165E-07	1.546E-05	2.824E-05	7.089E-05	6.023E-05
Th-229	Am-241	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Th-229	Np-237	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Th-229	∑DOSE (j)		8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.693E-05	8.629E-05
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	∑DOSE (j)		6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
U-234	Pu-238	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	U-238	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-234	∑DOSE (j)		7.230E-02	7.218E-02	6.625E-02	6.071E-02	3.017E-02	1.258E-02
Th-230	Pu-238	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	∑DOSE (j)		5.826E-02	5.826E-02	5.815E-02	5.805E-02	5.712E-02	5.590E-02
Ra-226	Pu-238	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Ra-226	Th-230	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Ra-226	U-234	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
Ra-226	U-238	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
Ra-226	∑DOSE (j)		1.903E-03	5.744E-03	1.908E-01	3.732E-01	1.620E+00	2.746E+00
Pb-210	Pu-238	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pb-210	Th-230	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Pb-210	U-234	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
Pb-210	U-238	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
Pb-210	∑DOSE (j)		9.109E-06	5.881E-05	3.788E-02	1.036E-01	6.051E-01	1.060E+00
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
U-235	Pu-239	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235	∑DOSE (j)		6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pa-231	U-235	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Pa-231	ΣDOSE(j)		2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Ac-227	Pu-239	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Ac-227	ΣDOSE(j)		2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	ΣDOSE(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
U-236	Pu-240	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Th-232	Pu-240	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	ΣDOSE(j)		6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Ra-228	Pu-240	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Ra-228	Th-232	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Ra-228	ΣDOSE(j)		4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-228	Pu-240	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Th-228	Th-228	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-228	ΣDOSE(j)		5.409E+00	3.991E+00	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238	U-238	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238	ΣDOSE(j)		1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 15 mrem

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	∑S(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	∑S(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	∑S(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	∑S(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	∑S(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	∑S(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	∑S(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 66.94 seconds

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2 (1)
B-1	Am-241	3.550E-01	3.552E-01	DCF2 (2)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2 (3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2 (4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2 (5)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2 (6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2 (7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2 (9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2 (10)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2 (12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2 (14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2 (15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2 (17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2 (18)
B-1	U-233	3.550E-02	3.552E-02	DCF2 (19)
B-1	U-234	3.480E-02	3.478E-02	DCF2 (20)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2 (21)
B-1	U-236	3.220E-02	3.219E-02	DCF2 (22)
B-1	U-238	2.960E-02	2.960E-02	DCF2 (23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2 (24)
Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3 (5)
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3 (6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3 (7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3 (9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3 (10)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3 (12)
D-1	Ra-228+D	2.552E-03	2.553E-03	DCF3 (13)
D-1	Tc-99	2.370E-06	2.368E-06	DCF3 (14)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.302E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.266E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.890E-04	1.887E-04	DCF3(19)
D-1	U-234	1.810E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(21)
D-1	U-236	1.740E-04	1.739E-04	DCF3(22)
D-1	U-238	1.670E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV (1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV (3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE (1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE (2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE (3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV (1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV (2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV (3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY (1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY (2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY (3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET (1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET (2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET (3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 20000.00 square meters	Am-241	1.000E+00
Thickness: 0.15 meters	Cs-137	1.000E+00
Cover Depth: 0.00 meters	Np-237	1.000E+00
	Pu-238	1.000E+00
	Pu-239	1.000E+00
	Pu-240	1.000E+00
	Tc-99	1.000E+00
	Th-228	1.000E+00
	Th-230	1.000E+00
	Th-232	1.000E+00
	U-234	1.000E+00
	U-235	1.000E+00
	U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.114E+01	1.044E+01	1.740E+01	1.691E+01	1.735E+01	1.818E+01
M(t):	4.457E-01	4.178E-01	6.959E-01	6.764E-01	6.939E-01	7.273E-01

Maximum TDOSE(t): 1.818E+01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.015E-02	0.0027	1.278E-04	0.0000	0.000E+00	0.0000	1.558E-02	0.0014	5.717E-03	0.0005	6.311E-04	0.0001	2.591E-02	0.0023
Cs-137	2.274E+00	0.2041	5.129E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0036	2.563E-01	0.0230	1.886E-01	0.0169	1.666E-03	0.0001
Np-237	7.719E-01	0.0693	6.662E-05	0.0000	0.000E+00	0.0000	1.722E-01	0.0155	6.839E-02	0.0061	9.437E-04	0.0001	1.436E-02	0.0013
Pu-238	9.534E-05	0.0000	1.461E-04	0.0000	0.000E+00	0.0000	1.786E-02	0.0016	1.311E-02	0.0012	3.618E-04	0.0000	2.970E-02	0.0027
Pu-239	2.054E-04	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Pu-240	9.266E-05	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Tc-99	7.626E-05	0.0000	1.507E-08	0.0000	0.000E+00	0.0000	2.182E-01	0.0196	7.221E-04	0.0001	1.968E-02	0.0018	7.220E-05	0.0000
Th-228	5.334E+00	0.4787	4.879E-05	0.0000	0.000E+00	0.0000	9.371E-03	0.0008	6.878E-03	0.0006	9.491E-04	0.0001	1.558E-02	0.0014
Th-230	2.431E-03	0.0002	1.333E-04	0.0000	0.000E+00	0.0000	1.655E-02	0.0015	1.205E-02	0.0011	1.768E-03	0.0002	2.723E-02	0.0024
Th-232	2.703E-01	0.0243	1.483E-04	0.0000	0.000E+00	0.0000	1.348E-01	0.0121	3.670E-02	0.0033	7.254E-02	0.0065	3.512E-02	0.0032
U-234	2.774E-04	0.0000	1.253E-05	0.0000	0.000E+00	0.0000	9.508E-03	0.0009	9.569E-03	0.0009	4.660E-02	0.0042	6.337E-03	0.0006
U-235	5.381E-01	0.0483	1.134E-05	0.0000	0.000E+00	0.0000	9.212E-03	0.0008	9.286E-03	0.0008	4.512E-02	0.0040	6.137E-03	0.0006
U-238	1.139E-01	0.0102	1.067E-05	0.0000	0.000E+00	0.0000	9.434E-03	0.0008	9.495E-03	0.0009	4.624E-02	0.0041	6.288E-03	0.0006
Total	9.336E+00	0.8378	1.025E-03	0.0001	0.000E+00	0.0000	6.916E-01	0.0621	4.568E-01	0.0410	4.242E-01	0.0381	2.332E-01	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.811E-02	0.0070
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.2478
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.028E+00	0.0922
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.127E-02	0.0055
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.696E-02	0.0060
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.685E-02	0.0060
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.387E-01	0.0214
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.367E+00	0.4817
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.017E-02	0.0054
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.496E-01	0.0493
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.230E-02	0.0065
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.0545
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-01	0.0166
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.114E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.010E-02	0.0029	1.276E-04	0.0000	0.000E+00	0.0000	1.555E-02	0.0015	5.708E-03	0.0005	6.301E-04	0.0001	2.586E-02	0.0025
Cs-137	2.221E+00	0.2127	5.009E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0037	2.503E-01	0.0240	1.842E-01	0.0176	1.627E-03	0.0002
Np-237	7.706E-01	0.0738	6.650E-05	0.0000	0.000E+00	0.0000	1.719E-01	0.0165	6.828E-02	0.0065	9.424E-04	0.0001	1.434E-02	0.0014
Pu-238	9.457E-05	0.0000	1.449E-04	0.0000	0.000E+00	0.0000	1.771E-02	0.0017	1.300E-02	0.0012	3.590E-04	0.0000	2.946E-02	0.0028
Pu-239	2.054E-04	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Pu-240	9.263E-05	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Tc-99	5.725E-05	0.0000	1.131E-08	0.0000	0.000E+00	0.0000	1.641E-01	0.0157	5.464E-04	0.0001	1.486E-02	0.0014	5.420E-05	0.0000
Th-228	3.713E+00	0.3555	3.396E-05	0.0000	0.000E+00	0.0000	6.523E-03	0.0006	4.787E-03	0.0005	6.606E-04	0.0001	1.085E-02	0.0010
Th-230	5.576E-03	0.0005	1.333E-04	0.0000	0.000E+00	0.0000	1.695E-02	0.0016	1.215E-02	0.0012	2.003E-03	0.0002	2.725E-02	0.0026
Th-232	9.039E-01	0.0865	1.525E-04	0.0000	0.000E+00	0.0000	3.638E-01	0.0348	8.566E-02	0.0082	2.075E-01	0.0199	4.530E-02	0.0043
U-234	2.769E-04	0.0000	1.251E-05	0.0000	0.000E+00	0.0000	9.491E-03	0.0009	9.552E-03	0.0009	4.652E-02	0.0045	6.326E-03	0.0006
U-235	5.371E-01	0.0514	1.133E-05	0.0000	0.000E+00	0.0000	9.207E-03	0.0009	9.314E-03	0.0009	4.504E-02	0.0043	6.128E-03	0.0006
U-238	1.137E-01	0.0109	1.065E-05	0.0000	0.000E+00	0.0000	9.418E-03	0.0009	9.479E-03	0.0009	4.616E-02	0.0044	6.277E-03	0.0006
Total	8.296E+00	0.7943	1.013E-03	0.0001	0.000E+00	0.0000	8.626E-01	0.0826	4.974E-01	0.0476	5.497E-01	0.0526	2.383E-01	0.0228

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.798E-02	0.0075
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.2582
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E+00	0.0982
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.077E-02	0.0058
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.694E-02	0.0064
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.682E-02	0.0064
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E-01	0.0172
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E+00	0.3577
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.406E-02	0.0061
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.606E+00	0.1538
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.218E-02	0.0069
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.0581
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.851E-01	0.0177
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.044E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.775E-02	0.0016	1.176E-04	0.0000	0.000E+00	0.0000	1.434E-02	0.0008	5.262E-03	0.0003	5.807E-04	0.0000	2.384E-02	0.0014
Cs-137	7.015E-01	0.0403	1.582E-08	0.0000	0.000E+00	0.0000	1.232E-02	0.0007	7.904E-02	0.0045	5.817E-02	0.0033	5.138E-04	0.0000
Np-237	7.101E-01	0.0408	6.128E-05	0.0000	0.000E+00	0.0000	1.584E-01	0.0091	6.292E-02	0.0036	8.779E-04	0.0001	1.321E-02	0.0008
Pu-238	6.358E-05	0.0000	9.736E-05	0.0000	0.000E+00	0.0000	1.190E-02	0.0007	8.738E-03	0.0005	2.463E-04	0.0000	1.980E-02	0.0011
Pu-239	2.030E-04	0.0000	1.581E-04	0.0000	0.000E+00	0.0000	1.925E-02	0.0011	1.413E-02	0.0008	3.900E-04	0.0000	3.202E-02	0.0018
Pu-240	9.119E-05	0.0000	1.574E-04	0.0000	0.000E+00	0.0000	1.918E-02	0.0011	1.408E-02	0.0008	3.885E-04	0.0000	3.189E-02	0.0018
Tc-99	4.512E-11	0.0000	8.916E-15	0.0000	0.000E+00	0.0000	1.293E-07	0.0000	4.307E-10	0.0000	1.171E-08	0.0000	4.272E-11	0.0000
Th-228	7.222E-08	0.0000	6.607E-13	0.0000	0.000E+00	0.0000	1.269E-10	0.0000	9.312E-11	0.0000	1.285E-11	0.0000	2.110E-10	0.0000
Th-230	1.570E-01	0.0090	1.334E-04	0.0000	0.000E+00	0.0000	5.085E-02	0.0029	2.557E-02	0.0015	2.264E-02	0.0013	3.055E-02	0.0018
Th-232	1.024E+01	0.5888	2.254E-04	0.0000	0.000E+00	0.0000	2.157E+00	0.1240	4.752E-01	0.0273	1.258E+00	0.0723	1.371E-01	0.0079
U-234	2.891E-04	0.0000	1.154E-05	0.0000	0.000E+00	0.0000	8.724E-03	0.0005	8.774E-03	0.0005	4.269E-02	0.0025	5.818E-03	0.0003
U-235	4.939E-01	0.0284	1.097E-05	0.0000	0.000E+00	0.0000	9.119E-03	0.0005	1.065E-02	0.0006	4.137E-02	0.0024	5.796E-03	0.0003
U-238	1.044E-01	0.0060	9.776E-06	0.0000	0.000E+00	0.0000	8.646E-03	0.0005	8.701E-03	0.0005	4.237E-02	0.0024	5.762E-03	0.0003
Total	1.244E+01	0.7150	9.829E-04	0.0001	0.000E+00	0.0000	2.470E+00	0.1420	7.130E-01	0.0410	1.468E+00	0.0844	3.063E-01	0.0176

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.188E-02	0.0041
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.516E-01	0.0490
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.455E-01	0.0544
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.085E-02	0.0023
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.616E-02	0.0038
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.579E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.415E-07	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.267E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.868E-01	0.0165
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.427E+01	0.8203
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.631E-02	0.0038
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.608E-01	0.0322
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.699E-01	0.0098
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.554E-02	0.0015	1.082E-04	0.0000	0.000E+00	0.0000	1.319E-02	0.0008	4.842E-03	0.0003	5.343E-04	0.0000	2.193E-02	0.0013
Cs-137	2.164E-01	0.0128	4.880E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0002	2.438E-02	0.0014	1.794E-02	0.0011	1.585E-04	0.0000
Np-237	6.532E-01	0.0386	5.638E-05	0.0000	0.000E+00	0.0000	1.457E-01	0.0086	5.788E-02	0.0034	8.166E-04	0.0000	1.216E-02	0.0007
Pu-238	4.242E-05	0.0000	6.490E-05	0.0000	0.000E+00	0.0000	7.936E-03	0.0005	5.825E-03	0.0003	1.689E-04	0.0000	1.320E-02	0.0008
Pu-239	2.005E-04	0.0000	1.562E-04	0.0000	0.000E+00	0.0000	1.902E-02	0.0011	1.396E-02	0.0008	3.853E-04	0.0000	3.163E-02	0.0019
Pu-240	8.975E-05	0.0000	1.549E-04	0.0000	0.000E+00	0.0000	1.888E-02	0.0011	1.385E-02	0.0008	3.824E-04	0.0000	3.139E-02	0.0019
Tc-99	2.670E-17	0.0000	5.275E-21	0.0000	0.000E+00	0.0000	7.651E-14	0.0000	2.548E-16	0.0000	6.928E-15	0.0000	2.527E-17	0.0000
Th-228	9.779E-16	0.0000	8.945E-21	0.0000	0.000E+00	0.0000	1.718E-18	0.0000	1.261E-18	0.0000	1.740E-19	0.0000	2.857E-18	0.0000
Th-230	3.063E-01	0.0181	1.336E-04	0.0000	0.000E+00	0.0000	9.600E-02	0.0057	4.599E-02	0.0027	5.040E-02	0.0030	3.577E-02	0.0021
Th-232	1.026E+01	0.6065	2.252E-04	0.0000	0.000E+00	0.0000	2.158E+00	0.1276	4.754E-01	0.0281	1.259E+00	0.0744	1.371E-01	0.0081
U-234	3.654E-04	0.0000	1.063E-05	0.0000	0.000E+00	0.0000	8.024E-03	0.0005	8.054E-03	0.0005	3.913E-02	0.0023	5.344E-03	0.0003
U-235	4.539E-01	0.0268	1.092E-05	0.0000	0.000E+00	0.0000	9.116E-03	0.0005	1.187E-02	0.0007	3.794E-02	0.0022	5.543E-03	0.0003
U-238	9.564E-02	0.0057	8.959E-06	0.0000	0.000E+00	0.0000	7.923E-03	0.0005	7.974E-03	0.0005	3.883E-02	0.0023	5.280E-03	0.0003
Total	1.201E+01	0.7100	9.300E-04	0.0001	0.000E+00	0.0000	2.487E+00	0.1471	6.700E-01	0.0396	1.445E+00	0.0855	2.995E-01	0.0177

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.615E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.0155
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.698E-01	0.0514
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.723E-02	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.536E-02	0.0039
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.475E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.374E-14	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.839E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.346E-01	0.0316
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.428E+01	0.8447
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.093E-02	0.0036
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.0307
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-01	0.0092
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.691E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.316E-02	0.0008	5.559E-05	0.0000	0.000E+00	0.0000	6.787E-03	0.0004	2.491E-03	0.0001	2.745E-04	0.0000	1.127E-02	0.0006
Cs-137	1.774E-05	0.0000	3.999E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
Np-237	3.350E-01	0.0193	2.893E-05	0.0000	0.000E+00	0.0000	7.473E-02	0.0043	2.969E-02	0.0017	4.549E-04	0.0000	6.241E-03	0.0004
Pu-238	2.254E-06	0.0000	2.531E-06	0.0000	0.000E+00	0.0000	3.110E-04	0.0000	2.287E-04	0.0000	1.465E-05	0.0000	5.152E-04	0.0000
Pu-239	1.822E-04	0.0000	1.418E-04	0.0000	0.000E+00	0.0000	1.727E-02	0.0010	1.267E-02	0.0007	3.498E-04	0.0000	2.872E-02	0.0017
Pu-240	7.900E-05	0.0000	1.364E-04	0.0000	0.000E+00	0.0000	1.661E-02	0.0010	1.219E-02	0.0007	3.369E-04	0.0000	2.763E-02	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.325E+00	0.0764	1.349E-04	0.0000	0.000E+00	0.0000	4.258E-01	0.0245	1.986E-01	0.0114	2.536E-01	0.0146	7.491E-02	0.0043
Th-232	1.011E+01	0.5825	2.220E-04	0.0000	0.000E+00	0.0000	2.126E+00	0.1226	4.685E-01	0.0270	1.240E+00	0.0715	1.351E-01	0.0078
U-234	2.508E-03	0.0001	5.621E-06	0.0000	0.000E+00	0.0000	4.726E-03	0.0003	4.345E-03	0.0003	1.985E-02	0.0011	2.803E-03	0.0002
U-235	2.342E-01	0.0135	1.075E-05	0.0000	0.000E+00	0.0000	8.975E-03	0.0005	1.792E-02	0.0010	1.910E-02	0.0011	4.156E-03	0.0002
U-238	4.751E-02	0.0027	4.456E-06	0.0000	0.000E+00	0.0000	3.941E-03	0.0002	3.966E-03	0.0002	1.931E-02	0.0011	2.626E-03	0.0002
Total	1.206E+01	0.6954	7.429E-04	0.0000	0.000E+00	0.0000	2.686E+00	0.1548	7.505E-01	0.0433	1.554E+00	0.0896	2.940E-01	0.0169

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.404E-02	0.0020
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.461E-01	0.0257
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-03	0.0001
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.933E-02	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.699E-02	0.0033
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.278E+00	0.1313
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.408E+01	0.8114
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.424E-02	0.0020
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E-01	0.0164
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.736E-02	0.0045
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.748E-03	0.0003	2.418E-05	0.0000	0.000E+00	0.0000	2.957E-03	0.0002	1.085E-03	0.0001	1.194E-04	0.0000	4.900E-03	0.0003
Cs-137	1.383E-10	0.0000	3.119E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
Np-237	1.454E-01	0.0080	1.258E-05	0.0000	0.000E+00	0.0000	3.243E-02	0.0018	1.289E-02	0.0007	2.165E-04	0.0000	2.715E-03	0.0001
Pu-238	1.996E-06	0.0000	4.492E-08	0.0000	0.000E+00	0.0000	6.711E-06	0.0000	4.957E-06	0.0000	4.078E-06	0.0000	9.495E-06	0.0000
Pu-239	1.615E-04	0.0000	1.256E-04	0.0000	0.000E+00	0.0000	1.530E-02	0.0008	1.123E-02	0.0006	3.100E-04	0.0000	2.545E-02	0.0014
Pu-240	6.735E-05	0.0000	1.163E-04	0.0000	0.000E+00	0.0000	1.416E-02	0.0008	1.040E-02	0.0006	2.874E-04	0.0000	2.355E-02	0.0013
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.242E+00	0.1233	1.353E-04	0.0000	0.000E+00	0.0000	7.237E-01	0.0398	3.364E-01	0.0185	4.372E-01	0.0240	1.101E-01	0.0061
Th-232	9.923E+00	0.5457	2.179E-04	0.0000	0.000E+00	0.0000	2.088E+00	0.1148	4.600E-01	0.0253	1.218E+00	0.0670	1.327E-01	0.0073
U-234	6.675E-03	0.0004	2.746E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0002	2.654E-03	0.0001	9.360E-03	0.0005	1.456E-03	0.0001
U-235	1.067E-01	0.0059	1.004E-05	0.0000	0.000E+00	0.0000	8.369E-03	0.0005	1.997E-02	0.0011	8.224E-03	0.0005	3.193E-03	0.0002
U-238	1.982E-02	0.0011	1.862E-06	0.0000	0.000E+00	0.0000	1.647E-03	0.0001	1.657E-03	0.0001	8.066E-03	0.0004	1.097E-03	0.0001
Total	1.245E+01	0.6847	6.465E-04	0.0000	0.000E+00	0.0000	2.890E+00	0.1589	8.563E-01	0.0471	1.682E+00	0.0925	3.052E-01	0.0168

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.483E-02	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-01	0.0107
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.728E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.258E-02	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.859E-02	0.0027
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.850E+00	0.2117
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E+01	0.7601
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-02	0.0013
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.0081
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.229E-02	0.0018
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.818E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Am-241	Np-237+D	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Am-241	U-233	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
Am-241	Th-229+D	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Am-241	ΣDSR(j)		7.811E-02	7.798E-02	7.188E-02	6.615E-02	3.404E-02	1.483E-02
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Np-237+D	Np-237+D	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237+D	U-233	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
Np-237+D	Th-229+D	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Np-237+D	ΣDSR(j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.937E-01
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	U-234	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
Pu-238	Th-230	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Pu-238	Ra-226+D	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Pu-238	Pb-210+D	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pu-238	ΣDSR(j)		6.127E-02	6.077E-02	4.085E-02	2.723E-02	1.074E-03	2.728E-05
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-239	U-235+D	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
Pu-239	Pa-231	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pu-239	Ac-227+D	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Pu-239	ΣDSR(j)		6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	U-236	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Pu-240	Th-232	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Pu-240	Ra-228+D	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Pu-240	Th-228+D	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Pu-240	ΣDSR(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	Ra-226+D	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Th-230	Pb-210+D	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Th-230	ΣDSR(j)		6.017E-02	6.406E-02	2.868E-01	5.346E-01	2.278E+00	3.850E+00

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	Ra-228+D	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-232	Th-228+D	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-232	∑DSR(j)		5.496E-01	1.606E+00	1.427E+01	1.428E+01	1.408E+01	1.382E+01
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
U-234	Pb-210+D	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
U-234	∑DSR(j)		7.230E-02	7.218E-02	6.631E-02	6.093E-02	3.424E-02	2.393E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.844E-01	1.465E-01
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238+D	U-238+D	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238+D	U-234	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
U-238+D	Pb-210+D	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
U-238+D	∑DSR(j)		1.854E-01	1.851E-01	1.699E-01	1.557E-01	7.736E-02	3.229E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	3.201E+02	3.206E+02	3.478E+02	3.779E+02	7.344E+02	1.685E+03
Cs-137	9.056E+00	9.271E+00	2.936E+01	9.517E+01	1.161E+06	1.489E+11
Np-237	2.432E+01	2.436E+01	2.644E+01	2.874E+01	5.604E+01	1.291E+02
Pu-238	4.080E+02	4.114E+02	6.121E+02	9.180E+02	2.327E+04	9.164E+05
Pu-239	3.734E+02	3.734E+02	3.779E+02	3.825E+02	4.213E+02	4.755E+02
Pu-240	3.740E+02	3.741E+02	3.800E+02	3.861E+02	4.387E+02	5.145E+02
Tc-99	1.047E+02	1.392E+02	1.766E+08	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	4.658E+00	6.692E+00	3.440E+08	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	4.155E+02	3.902E+02	8.717E+01	4.677E+01	1.097E+01	6.493E+00
Th-232	4.549E+01	1.556E+01	1.752E+00	1.750E+00	1.776E+00	1.809E+00
U-234	3.458E+02	3.464E+02	3.770E+02	4.103E+02	7.301E+02	1.045E+03
U-235	4.113E+01	4.120E+01	4.458E+01	4.823E+01	8.792E+01	1.706E+02
U-238	1.349E+02	1.351E+02	1.472E+02	1.606E+02	3.232E+02	7.743E+02

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	7.811E-02	3.201E+02	1.483E-02	1.685E+03
Cs-137	1.000E+00	0.000E+00	2.761E+00	9.056E+00	1.679E-10	1.489E+11
Np-237	1.000E+00	0.000E+00	1.028E+00	2.432E+01	1.937E-01	1.291E+02
Pu-238	1.000E+00	0.000E+00	6.127E-02	4.080E+02	2.728E-05	9.164E+05
Pu-239	1.000E+00	0.000E+00	6.696E-02	3.734E+02	5.258E-02	4.755E+02
Pu-240	1.000E+00	0.000E+00	6.685E-02	3.740E+02	4.859E-02	5.145E+02
Tc-99	1.000E+00	0.000E+00	2.387E-01	1.047E+02	0.000E+00	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.367E+00	4.658E+00	0.000E+00	*8.195E+14
Th-230	1.000E+00	1.000E+03	3.850E+00	6.493E+00	3.850E+00	6.493E+00
Th-232	1.000E+00	68.1 ± 0.1	1.430E+01	1.749E+00	1.382E+01	1.809E+00
U-234	1.000E+00	0.000E+00	7.230E-02	3.458E+02	2.393E-02	1.045E+03
U-235	1.000E+00	0.000E+00	6.078E-01	4.113E+01	1.465E-01	1.706E+02
U-238	1.000E+00	0.000E+00	1.854E-01	1.349E+02	3.229E-02	7.743E+02

*At specific activity limit

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Np-237	Am-241	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Np-237	Np-237	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237	ΣDOSE (j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.936E-01
U-233	Am-241	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
U-233	Np-237	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
U-233	ΣDOSE (j)		1.816E-07	5.165E-07	1.546E-05	2.824E-05	7.089E-05	6.023E-05
Th-229	Am-241	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Th-229	Np-237	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Th-229	ΣDOSE (j)		8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.693E-05	8.629E-05
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	ΣDOSE (j)		6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
U-234	Pu-238	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	U-238	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-234	ΣDOSE (j)		7.230E-02	7.218E-02	6.625E-02	6.071E-02	3.017E-02	1.258E-02
Th-230	Pu-238	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	ΣDOSE (j)		5.826E-02	5.826E-02	5.815E-02	5.805E-02	5.712E-02	5.590E-02
Ra-226	Pu-238	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Ra-226	Th-230	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Ra-226	U-234	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
Ra-226	U-238	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
Ra-226	ΣDOSE (j)		1.903E-03	5.744E-03	1.908E-01	3.732E-01	1.620E+00	2.746E+00
Pb-210	Pu-238	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pb-210	Th-230	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Pb-210	U-234	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
Pb-210	U-238	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
Pb-210	ΣDOSE (j)		9.109E-06	5.881E-05	3.788E-02	1.036E-01	6.051E-01	1.060E+00
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
U-235	Pu-239	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235	ΣDOSE (j)		6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pu-231	Pu-239	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pu-231	U-235	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Pu-231	ΣDOSE(j)		2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Ac-227	Pu-239	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Ac-227	ΣDOSE(j)		2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	ΣDOSE(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
U-236	Pu-240	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Th-232	Pu-240	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	ΣDOSE(j)		6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Ra-228	Pu-240	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Ra-228	Th-232	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Ra-228	ΣDOSE(j)		4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-228	Pu-240	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Th-228	Th-228	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-228	ΣDOSE(j)		5.409E+00	3.991E+00	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238	U-238	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238	ΣDOSE(j)		1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 25 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	∑S(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	∑S(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	∑S(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	∑S(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	∑S(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	∑S(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	∑S(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 66.56 seconds

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1(51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1(54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1(55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1(57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1(60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.109E+00	2.035E+00	DCF2(1)
B-1	Am-241	3.550E-01	3.552E-01	DCF2(2)
B-1	Cs-137+D	1.440E-04	1.443E-04	DCF2(3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2(4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(5)
B-1	Pb-210+D	3.694E-02	2.072E-02	DCF2(6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2(7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2(9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2(10)
B-1	Ra-226+D	3.531E-02	3.515E-02	DCF2(12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2(13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2(14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2(15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2(16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2(18)
B-1	U-233	3.550E-02	3.552E-02	DCF2(19)
B-1	U-234	3.480E-02	3.478E-02	DCF2(20)
B-1	U-235+D	3.150E-02	3.145E-02	DCF2(21)
B-1	U-236	3.220E-02	3.219E-02	DCF2(22)
B-1	U-238	2.960E-02	2.960E-02	DCF2(23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3(2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3(4)
D-1	Pa-231	2.630E-03	2.627E-03	DCF3(5)
D-1	Pb-210+D	6.995E-03	2.553E-03	DCF3(6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3(7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3(9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3(10)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3(12)
D-1	Ra-228+D	2.552E-03	2.553E-03	DCF3(13)
D-1	Tc-99	2.370E-06	2.368E-06	DCF3(14)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.302E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.266E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.890E-04	1.887E-04	DCF3(19)
D-1	U-234	1.810E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.753E-04	1.739E-04	DCF3(21)
D-1	U-236	1.740E-04	1.739E-04	DCF3(22)
D-1	U-238	1.670E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.796E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+02	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV (1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV (3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE (1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE (2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE (3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV (1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV (2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV (3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY (1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY (2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY (3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET (1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET (2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET (3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 20000.00 square meters	Am-241	1.000E+00
Thickness: 0.15 meters	Cs-137	1.000E+00
Cover Depth: 0.00 meters	Np-237	1.000E+00
	Pu-238	1.000E+00
	Pu-239	1.000E+00
	Pu-240	1.000E+00
	Tc-99	1.000E+00
	Th-228	1.000E+00
	Th-230	1.000E+00
	Th-232	1.000E+00
	U-234	1.000E+00
	U-235	1.000E+00
	U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.114E+01	1.044E+01	1.740E+01	1.691E+01	1.735E+01	1.818E+01
M(t):	1.114E-01	1.044E-01	1.740E-01	1.691E-01	1.735E-01	1.818E-01

Maximum TDOSE(t): 1.818E+01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.015E-02	0.0027	1.278E-04	0.0000	0.000E+00	0.0000	1.558E-02	0.0014	5.717E-03	0.0005	6.311E-04	0.0001	2.591E-02	0.0023
Cs-137	2.274E+00	0.2041	5.129E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0036	2.563E-01	0.0230	1.886E-01	0.0169	1.666E-03	0.0001
Np-237	7.719E-01	0.0693	6.662E-05	0.0000	0.000E+00	0.0000	1.722E-01	0.0155	6.839E-02	0.0061	9.437E-04	0.0001	1.436E-02	0.0013
Pu-238	9.534E-05	0.0000	1.461E-04	0.0000	0.000E+00	0.0000	1.786E-02	0.0016	1.311E-02	0.0012	3.618E-04	0.0000	2.970E-02	0.0027
Pu-239	2.054E-04	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Pu-240	9.266E-05	0.0000	1.600E-04	0.0000	0.000E+00	0.0000	1.949E-02	0.0017	1.430E-02	0.0013	3.947E-04	0.0000	3.241E-02	0.0029
Tc-99	7.626E-05	0.0000	1.507E-08	0.0000	0.000E+00	0.0000	2.182E-01	0.0196	7.221E-04	0.0001	1.968E-02	0.0018	7.220E-05	0.0000
Th-228	5.334E+00	0.4787	4.879E-05	0.0000	0.000E+00	0.0000	9.371E-03	0.0008	6.878E-03	0.0006	9.491E-04	0.0001	1.558E-02	0.0014
Th-230	2.431E-03	0.0002	1.333E-04	0.0000	0.000E+00	0.0000	1.655E-02	0.0015	1.205E-02	0.0011	1.768E-03	0.0002	2.723E-02	0.0024
Th-232	2.703E-01	0.0243	1.483E-04	0.0000	0.000E+00	0.0000	1.348E-01	0.0121	3.670E-02	0.0033	7.254E-02	0.0065	3.512E-02	0.0032
U-234	2.774E-04	0.0000	1.253E-05	0.0000	0.000E+00	0.0000	9.508E-03	0.0009	9.569E-03	0.0009	4.660E-02	0.0042	6.337E-03	0.0006
U-235	5.381E-01	0.0483	1.134E-05	0.0000	0.000E+00	0.0000	9.212E-03	0.0008	9.286E-03	0.0008	4.512E-02	0.0040	6.137E-03	0.0006
U-238	1.139E-01	0.0102	1.067E-05	0.0000	0.000E+00	0.0000	9.434E-03	0.0008	9.495E-03	0.0009	4.624E-02	0.0041	6.288E-03	0.0006
Total	9.336E+00	0.8378	1.025E-03	0.0001	0.000E+00	0.0000	6.916E-01	0.0621	4.568E-01	0.0410	4.242E-01	0.0381	2.332E-01	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.811E-02	0.0070
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.2478
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.028E+00	0.0922
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.127E-02	0.0055
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.696E-02	0.0060
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.685E-02	0.0060
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.387E-01	0.0214
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.367E+00	0.4817
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.017E-02	0.0054
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.496E-01	0.0493
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.230E-02	0.0065
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.0545
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-01	0.0166
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.114E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.010E-02	0.0029	1.276E-04	0.0000	0.000E+00	0.0000	1.555E-02	0.0015	5.708E-03	0.0005	6.301E-04	0.0001	2.586E-02	0.0025
Cs-137	2.221E+00	0.2127	5.009E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0037	2.503E-01	0.0240	1.842E-01	0.0176	1.627E-03	0.0002
Np-237	7.706E-01	0.0738	6.650E-05	0.0000	0.000E+00	0.0000	1.719E-01	0.0165	6.828E-02	0.0065	9.424E-04	0.0001	1.434E-02	0.0014
Pu-238	9.457E-05	0.0000	1.449E-04	0.0000	0.000E+00	0.0000	1.771E-02	0.0017	1.300E-02	0.0012	3.590E-04	0.0000	2.946E-02	0.0028
Pu-239	2.054E-04	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Pu-240	9.263E-05	0.0000	1.599E-04	0.0000	0.000E+00	0.0000	1.948E-02	0.0019	1.430E-02	0.0014	3.946E-04	0.0000	3.240E-02	0.0031
Tc-99	5.725E-05	0.0000	1.131E-08	0.0000	0.000E+00	0.0000	1.641E-01	0.0157	5.464E-04	0.0001	1.486E-02	0.0014	5.420E-05	0.0000
Th-228	3.713E+00	0.3555	3.396E-05	0.0000	0.000E+00	0.0000	6.523E-03	0.0006	4.787E-03	0.0005	6.606E-04	0.0001	1.085E-02	0.0010
Th-230	5.576E-03	0.0005	1.333E-04	0.0000	0.000E+00	0.0000	1.695E-02	0.0016	1.215E-02	0.0012	2.003E-03	0.0002	2.725E-02	0.0026
Th-232	9.039E-01	0.0865	1.525E-04	0.0000	0.000E+00	0.0000	3.638E-01	0.0348	8.566E-02	0.0082	2.075E-01	0.0199	4.530E-02	0.0043
U-234	2.769E-04	0.0000	1.251E-05	0.0000	0.000E+00	0.0000	9.491E-03	0.0009	9.552E-03	0.0009	4.652E-02	0.0045	6.326E-03	0.0006
U-235	5.371E-01	0.0514	1.133E-05	0.0000	0.000E+00	0.0000	9.207E-03	0.0009	9.314E-03	0.0009	4.504E-02	0.0043	6.128E-03	0.0006
U-238	1.137E-01	0.0109	1.065E-05	0.0000	0.000E+00	0.0000	9.418E-03	0.0009	9.479E-03	0.0009	4.616E-02	0.0044	6.277E-03	0.0006
Total	8.296E+00	0.7943	1.013E-03	0.0001	0.000E+00	0.0000	8.626E-01	0.0826	4.974E-01	0.0476	5.497E-01	0.0526	2.383E-01	0.0228

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.798E-02	0.0075
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.2582
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E+00	0.0982
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.077E-02	0.0058
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.694E-02	0.0064
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.682E-02	0.0064
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E-01	0.0172
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E+00	0.3577
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.406E-02	0.0061
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.606E+00	0.1538
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.218E-02	0.0069
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.0581
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.851E-01	0.0177
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.044E+01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.775E-02	0.0016	1.176E-04	0.0000	0.000E+00	0.0000	1.434E-02	0.0008	5.262E-03	0.0003	5.807E-04	0.0000	2.384E-02	0.0014
Cs-137	7.015E-01	0.0403	1.582E-08	0.0000	0.000E+00	0.0000	1.232E-02	0.0007	7.904E-02	0.0045	5.817E-02	0.0033	5.138E-04	0.0000
Np-237	7.101E-01	0.0408	6.128E-05	0.0000	0.000E+00	0.0000	1.584E-01	0.0091	6.292E-02	0.0036	8.779E-04	0.0001	1.321E-02	0.0008
Pu-238	6.358E-05	0.0000	9.736E-05	0.0000	0.000E+00	0.0000	1.190E-02	0.0007	8.738E-03	0.0005	2.463E-04	0.0000	1.980E-02	0.0011
Pu-239	2.030E-04	0.0000	1.581E-04	0.0000	0.000E+00	0.0000	1.925E-02	0.0011	1.413E-02	0.0008	3.900E-04	0.0000	3.202E-02	0.0018
Pu-240	9.119E-05	0.0000	1.574E-04	0.0000	0.000E+00	0.0000	1.918E-02	0.0011	1.408E-02	0.0008	3.885E-04	0.0000	3.189E-02	0.0018
Tc-99	4.512E-11	0.0000	8.916E-15	0.0000	0.000E+00	0.0000	1.293E-07	0.0000	4.307E-10	0.0000	1.171E-08	0.0000	4.272E-11	0.0000
Th-228	7.222E-08	0.0000	6.607E-13	0.0000	0.000E+00	0.0000	1.269E-10	0.0000	9.312E-11	0.0000	1.285E-11	0.0000	2.110E-10	0.0000
Th-230	1.570E-01	0.0090	1.334E-04	0.0000	0.000E+00	0.0000	5.085E-02	0.0029	2.557E-02	0.0015	2.264E-02	0.0013	3.055E-02	0.0018
Th-232	1.024E+01	0.5888	2.254E-04	0.0000	0.000E+00	0.0000	2.157E+00	0.1240	4.752E-01	0.0273	1.258E+00	0.0723	1.371E-01	0.0079
U-234	2.891E-04	0.0000	1.154E-05	0.0000	0.000E+00	0.0000	8.724E-03	0.0005	8.774E-03	0.0005	4.269E-02	0.0025	5.818E-03	0.0003
U-235	4.939E-01	0.0284	1.097E-05	0.0000	0.000E+00	0.0000	9.119E-03	0.0005	1.065E-02	0.0006	4.137E-02	0.0024	5.796E-03	0.0003
U-238	1.044E-01	0.0060	9.776E-06	0.0000	0.000E+00	0.0000	8.646E-03	0.0005	8.701E-03	0.0005	4.237E-02	0.0024	5.762E-03	0.0003
Total	1.244E+01	0.7150	9.829E-04	0.0001	0.000E+00	0.0000	2.470E+00	0.1420	7.130E-01	0.0410	1.468E+00	0.0844	3.063E-01	0.0176

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.188E-02	0.0041
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.516E-01	0.0490
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.455E-01	0.0544
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.085E-02	0.0023
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.616E-02	0.0038
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.579E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.415E-07	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.267E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.868E-01	0.0165
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.427E+01	0.8203
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.631E-02	0.0038
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.608E-01	0.0322
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.699E-01	0.0098
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.554E-02	0.0015	1.082E-04	0.0000	0.000E+00	0.0000	1.319E-02	0.0008	4.842E-03	0.0003	5.343E-04	0.0000	2.193E-02	0.0013
Cs-137	2.164E-01	0.0128	4.880E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0002	2.438E-02	0.0014	1.794E-02	0.0011	1.585E-04	0.0000
Np-237	6.532E-01	0.0386	5.638E-05	0.0000	0.000E+00	0.0000	1.457E-01	0.0086	5.788E-02	0.0034	8.166E-04	0.0000	1.216E-02	0.0007
Pu-238	4.242E-05	0.0000	6.490E-05	0.0000	0.000E+00	0.0000	7.936E-03	0.0005	5.825E-03	0.0003	1.689E-04	0.0000	1.320E-02	0.0008
Pu-239	2.005E-04	0.0000	1.562E-04	0.0000	0.000E+00	0.0000	1.902E-02	0.0011	1.396E-02	0.0008	3.853E-04	0.0000	3.163E-02	0.0019
Pu-240	8.975E-05	0.0000	1.549E-04	0.0000	0.000E+00	0.0000	1.888E-02	0.0011	1.385E-02	0.0008	3.824E-04	0.0000	3.139E-02	0.0019
Tc-99	2.670E-17	0.0000	5.275E-21	0.0000	0.000E+00	0.0000	7.651E-14	0.0000	2.548E-16	0.0000	6.928E-15	0.0000	2.527E-17	0.0000
Th-228	9.779E-16	0.0000	8.945E-21	0.0000	0.000E+00	0.0000	1.718E-18	0.0000	1.261E-18	0.0000	1.740E-19	0.0000	2.857E-18	0.0000
Th-230	3.063E-01	0.0181	1.336E-04	0.0000	0.000E+00	0.0000	9.600E-02	0.0057	4.599E-02	0.0027	5.040E-02	0.0030	3.577E-02	0.0021
Th-232	1.026E+01	0.6065	2.252E-04	0.0000	0.000E+00	0.0000	2.158E+00	0.1276	4.754E-01	0.0281	1.259E+00	0.0744	1.371E-01	0.0081
U-234	3.654E-04	0.0000	1.063E-05	0.0000	0.000E+00	0.0000	8.024E-03	0.0005	8.054E-03	0.0005	3.913E-02	0.0023	5.344E-03	0.0003
U-235	4.539E-01	0.0268	1.092E-05	0.0000	0.000E+00	0.0000	9.116E-03	0.0005	1.187E-02	0.0007	3.794E-02	0.0022	5.543E-03	0.0003
U-238	9.564E-02	0.0057	8.959E-06	0.0000	0.000E+00	0.0000	7.923E-03	0.0005	7.974E-03	0.0005	3.883E-02	0.0023	5.280E-03	0.0003
Total	1.201E+01	0.7100	9.300E-04	0.0001	0.000E+00	0.0000	2.487E+00	0.1471	6.700E-01	0.0396	1.445E+00	0.0855	2.995E-01	0.0177

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.615E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.0155
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.698E-01	0.0514
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.723E-02	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.536E-02	0.0039
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.475E-02	0.0038
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.374E-14	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.839E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.346E-01	0.0316
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.428E+01	0.8447
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.093E-02	0.0036
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.0307
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-01	0.0092
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.691E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.316E-02	0.0008	5.559E-05	0.0000	0.000E+00	0.0000	6.787E-03	0.0004	2.491E-03	0.0001	2.745E-04	0.0000	1.127E-02	0.0006
Cs-137	1.774E-05	0.0000	3.999E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
Np-237	3.350E-01	0.0193	2.893E-05	0.0000	0.000E+00	0.0000	7.473E-02	0.0043	2.969E-02	0.0017	4.549E-04	0.0000	6.241E-03	0.0004
Pu-238	2.254E-06	0.0000	2.531E-06	0.0000	0.000E+00	0.0000	3.110E-04	0.0000	2.287E-04	0.0000	1.465E-05	0.0000	5.152E-04	0.0000
Pu-239	1.822E-04	0.0000	1.418E-04	0.0000	0.000E+00	0.0000	1.727E-02	0.0010	1.267E-02	0.0007	3.498E-04	0.0000	2.872E-02	0.0017
Pu-240	7.900E-05	0.0000	1.364E-04	0.0000	0.000E+00	0.0000	1.661E-02	0.0010	1.219E-02	0.0007	3.369E-04	0.0000	2.763E-02	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.325E+00	0.0764	1.349E-04	0.0000	0.000E+00	0.0000	4.258E-01	0.0245	1.986E-01	0.0114	2.536E-01	0.0146	7.491E-02	0.0043
Th-232	1.011E+01	0.5825	2.220E-04	0.0000	0.000E+00	0.0000	2.126E+00	0.1226	4.685E-01	0.0270	1.240E+00	0.0715	1.351E-01	0.0078
U-234	2.508E-03	0.0001	5.621E-06	0.0000	0.000E+00	0.0000	4.726E-03	0.0003	4.345E-03	0.0003	1.985E-02	0.0011	2.803E-03	0.0002
U-235	2.342E-01	0.0135	1.075E-05	0.0000	0.000E+00	0.0000	8.975E-03	0.0005	1.792E-02	0.0010	1.910E-02	0.0011	4.156E-03	0.0002
U-238	4.751E-02	0.0027	4.456E-06	0.0000	0.000E+00	0.0000	3.941E-03	0.0002	3.966E-03	0.0002	1.931E-02	0.0011	2.626E-03	0.0002
Total	1.206E+01	0.6954	7.429E-04	0.0000	0.000E+00	0.0000	2.686E+00	0.1548	7.505E-01	0.0433	1.554E+00	0.0896	2.940E-01	0.0169

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.404E-02	0.0020
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.461E-01	0.0257
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-03	0.0001
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.933E-02	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.699E-02	0.0033
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.278E+00	0.1313
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.408E+01	0.8114
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.424E-02	0.0020
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E-01	0.0164
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.736E-02	0.0045
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.748E-03	0.0003	2.418E-05	0.0000	0.000E+00	0.0000	2.957E-03	0.0002	1.085E-03	0.0001	1.194E-04	0.0000	4.900E-03	0.0003
Cs-137	1.383E-10	0.0000	3.119E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
Np-237	1.454E-01	0.0080	1.258E-05	0.0000	0.000E+00	0.0000	3.243E-02	0.0018	1.289E-02	0.0007	2.165E-04	0.0000	2.715E-03	0.0001
Pu-238	1.996E-06	0.0000	4.492E-08	0.0000	0.000E+00	0.0000	6.711E-06	0.0000	4.957E-06	0.0000	4.078E-06	0.0000	9.495E-06	0.0000
Pu-239	1.615E-04	0.0000	1.256E-04	0.0000	0.000E+00	0.0000	1.530E-02	0.0008	1.123E-02	0.0006	3.100E-04	0.0000	2.545E-02	0.0014
Pu-240	6.735E-05	0.0000	1.163E-04	0.0000	0.000E+00	0.0000	1.416E-02	0.0008	1.040E-02	0.0006	2.874E-04	0.0000	2.355E-02	0.0013
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.242E+00	0.1233	1.353E-04	0.0000	0.000E+00	0.0000	7.237E-01	0.0398	3.364E-01	0.0185	4.372E-01	0.0240	1.101E-01	0.0061
Th-232	9.923E+00	0.5457	2.179E-04	0.0000	0.000E+00	0.0000	2.088E+00	0.1148	4.600E-01	0.0253	1.218E+00	0.0670	1.327E-01	0.0073
U-234	6.675E-03	0.0004	2.746E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0002	2.654E-03	0.0001	9.360E-03	0.0005	1.456E-03	0.0001
U-235	1.067E-01	0.0059	1.004E-05	0.0000	0.000E+00	0.0000	8.369E-03	0.0005	1.997E-02	0.0011	8.224E-03	0.0005	3.193E-03	0.0002
U-238	1.982E-02	0.0011	1.862E-06	0.0000	0.000E+00	0.0000	1.647E-03	0.0001	1.657E-03	0.0001	8.066E-03	0.0004	1.097E-03	0.0001
Total	1.245E+01	0.6847	6.465E-04	0.0000	0.000E+00	0.0000	2.890E+00	0.1589	8.563E-01	0.0471	1.682E+00	0.0925	3.052E-01	0.0168

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.483E-02	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-01	0.0107
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.728E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.258E-02	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.859E-02	0.0027
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.850E+00	0.2117
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E+01	0.7601
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-02	0.0013
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.0081
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.229E-02	0.0018
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.818E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-RF-QC.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Am-241	Np-237+D	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Am-241	U-233	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
Am-241	Th-229+D	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Am-241	ΣDSR(j)		7.811E-02	7.798E-02	7.188E-02	6.615E-02	3.404E-02	1.483E-02
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Np-237+D	Np-237+D	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237+D	U-233	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
Np-237+D	Th-229+D	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Np-237+D	ΣDSR(j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.937E-01
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	U-234	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
Pu-238	Th-230	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Pu-238	Ra-226+D	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Pu-238	Pb-210+D	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pu-238	ΣDSR(j)		6.127E-02	6.077E-02	4.085E-02	2.723E-02	1.074E-03	2.728E-05
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-239	U-235+D	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
Pu-239	Pa-231	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pu-239	Ac-227+D	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Pu-239	ΣDSR(j)		6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	U-236	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Pu-240	Th-232	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Pu-240	Ra-228+D	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Pu-240	Th-228+D	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Pu-240	ΣDSR(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	Ra-226+D	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Th-230	Pb-210+D	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Th-230	ΣDSR(j)		6.017E-02	6.406E-02	2.868E-01	5.346E-01	2.278E+00	3.850E+00

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	Ra-228+D	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-232	Th-228+D	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-232	∑DSR(j)		5.496E-01	1.606E+00	1.427E+01	1.428E+01	1.408E+01	1.382E+01
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
U-234	Pb-210+D	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
U-234	∑DSR(j)		7.230E-02	7.218E-02	6.631E-02	6.093E-02	3.424E-02	2.393E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.844E-01	1.465E-01
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238+D	U-238+D	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238+D	U-234	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
U-238+D	Pb-210+D	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
U-238+D	∑DSR(j)		1.854E-01	1.851E-01	1.699E-01	1.557E-01	7.736E-02	3.229E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	1.280E+03	1.282E+03	1.391E+03	1.512E+03	2.938E+03	6.741E+03
Cs-137	3.622E+01	3.708E+01	1.174E+02	3.807E+02	4.645E+06	5.956E+11
Np-237	9.729E+01	9.745E+01	1.058E+02	1.150E+02	2.242E+02	5.163E+02
Pu-238	1.632E+03	1.645E+03	2.448E+03	3.672E+03	9.308E+04	3.665E+06
Pu-239	1.493E+03	1.494E+03	1.512E+03	1.530E+03	1.685E+03	1.902E+03
Pu-240	1.496E+03	1.496E+03	1.520E+03	1.544E+03	1.755E+03	2.058E+03
Tc-99	4.189E+02	5.569E+02	7.065E+08	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	1.863E+01	2.677E+01	1.376E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	1.662E+03	1.561E+03	3.487E+02	1.871E+02	4.390E+01	2.597E+01
Th-232	1.819E+02	6.225E+01	7.007E+00	7.001E+00	7.104E+00	7.235E+00
U-234	1.383E+03	1.386E+03	1.508E+03	1.641E+03	2.921E+03	4.179E+03
U-235	1.645E+02	1.648E+02	1.783E+02	1.929E+02	3.517E+02	6.825E+02
U-238	5.394E+02	5.404E+02	5.887E+02	6.424E+02	1.293E+03	3.097E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	7.811E-02	1.280E+03	1.483E-02	6.741E+03
Cs-137	1.000E+00	0.000E+00	2.761E+00	3.622E+01	1.679E-10	5.956E+11
Np-237	1.000E+00	0.000E+00	1.028E+00	9.729E+01	1.937E-01	5.163E+02
Pu-238	1.000E+00	0.000E+00	6.127E-02	1.632E+03	2.728E-05	3.665E+06
Pu-239	1.000E+00	0.000E+00	6.696E-02	1.493E+03	5.258E-02	1.902E+03
Pu-240	1.000E+00	0.000E+00	6.685E-02	1.496E+03	4.859E-02	2.058E+03
Tc-99	1.000E+00	0.000E+00	2.387E-01	4.189E+02	0.000E+00	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.367E+00	1.863E+01	0.000E+00	*8.195E+14
Th-230	1.000E+00	1.000E+03	3.850E+00	2.597E+01	3.850E+00	2.597E+01
Th-232	1.000E+00	68.1 ± 0.1	1.430E+01	6.995E+00	1.382E+01	7.235E+00
U-234	1.000E+00	0.000E+00	7.230E-02	1.383E+03	2.393E-02	4.179E+03
U-235	1.000E+00	0.000E+00	6.078E-01	1.645E+02	1.465E-01	6.825E+02
U-238	1.000E+00	0.000E+00	1.854E-01	5.394E+02	3.229E-02	3.097E+03

*At specific activity limit

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.811E-02	7.798E-02	7.187E-02	6.613E-02	3.397E-02	1.477E-02
Np-237	Am-241	1.000E+00	1.636E-07	4.953E-07	1.546E-05	2.832E-05	7.238E-05	6.285E-05
Np-237	Np-237	1.000E+00	1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.460E-01	1.935E-01
Np-237	∑DOSE (j)		1.028E+00	1.026E+00	9.455E-01	8.698E-01	4.461E-01	1.936E-01
U-233	Am-241	1.000E+00	2.046E-14	1.339E-13	1.267E-10	4.605E-10	5.790E-09	9.909E-09
U-233	Np-237	1.000E+00	1.816E-07	5.165E-07	1.546E-05	2.823E-05	7.088E-05	6.022E-05
U-233	∑DOSE (j)		1.816E-07	5.165E-07	1.546E-05	2.824E-05	7.089E-05	6.023E-05
Th-229	Am-241	1.000E+00	7.308E-18	1.074E-16	3.412E-12	2.520E-11	1.868E-09	8.070E-09
Th-229	Np-237	1.000E+00	8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.692E-05	8.628E-05
Th-229	∑DOSE (j)		8.932E-11	6.158E-10	6.295E-07	2.351E-06	3.693E-05	8.629E-05
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
Pu-238	Pu-238	1.840E-09	1.127E-10	1.118E-10	7.514E-11	5.009E-11	1.951E-12	3.378E-14
Pu-238	Pu-238	1.000E+00	6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
Pu-238	∑DOSE (j)		6.127E-02	6.077E-02	4.084E-02	2.722E-02	1.061E-03	1.836E-05
U-234	Pu-238	1.000E+00	1.004E-07	3.033E-07	8.109E-06	1.277E-05	1.286E-05	5.579E-06
U-234	U-234	1.000E+00	7.230E-02	7.217E-02	6.624E-02	6.068E-02	3.011E-02	1.254E-02
U-234	U-238	9.999E-01	1.024E-07	3.069E-07	9.483E-06	1.729E-05	4.275E-05	3.562E-05
U-234	∑DOSE (j)		7.230E-02	7.218E-02	6.625E-02	6.071E-02	3.017E-02	1.258E-02
Th-230	Pu-238	1.000E+00	2.821E-13	1.837E-12	1.614E-09	5.473E-09	4.908E-08	7.947E-08
Th-230	Th-230	1.000E+00	5.826E-02	5.826E-02	5.813E-02	5.800E-02	5.695E-02	5.566E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	∑DOSE (j)		5.826E-02	5.826E-02	5.815E-02	5.805E-02	5.712E-02	5.590E-02
Ra-226	Pu-238	1.000E+00	3.995E-15	6.044E-14	1.848E-09	1.286E-08	6.763E-07	2.375E-06
Ra-226	Th-230	1.000E+00	1.903E-03	5.744E-03	1.908E-01	3.730E-01	1.617E+00	2.738E+00
Ra-226	U-234	1.000E+00	5.673E-09	4.004E-08	4.236E-05	1.611E-04	2.919E-03	8.088E-03
Ra-226	U-238	9.999E-01	4.000E-15	6.060E-14	1.998E-09	1.494E-08	1.227E-06	6.029E-06
Ra-226	∑DOSE (j)		1.903E-03	5.744E-03	1.908E-01	3.732E-01	1.620E+00	2.746E+00
Pb-210	Pu-238	1.000E+00	1.236E-17	3.498E-16	2.234E-10	2.474E-09	2.339E-07	8.918E-07
Pb-210	Th-230	1.000E+00	9.109E-06	5.881E-05	3.787E-02	1.035E-01	6.040E-01	1.057E+00
Pb-210	U-234	1.000E+00	2.122E-11	2.920E-10	6.295E-06	3.611E-05	1.038E-03	3.061E-03
Pb-210	U-238	9.999E-01	1.237E-17	3.506E-16	2.385E-10	2.819E-09	4.142E-07	2.228E-06
Pb-210	∑DOSE (j)		9.109E-06	5.881E-05	3.788E-02	1.036E-01	6.051E-01	1.060E+00
Pu-239	Pu-239	1.000E+00	6.696E-02	6.694E-02	6.616E-02	6.536E-02	5.933E-02	5.258E-02
U-235	Pu-239	1.000E+00	2.988E-10	8.966E-10	2.878E-08	5.453E-08	1.865E-07	2.430E-07
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01
U-235	∑DOSE (j)		6.078E-01	6.067E-01	5.569E-01	5.103E-01	2.535E-01	1.057E-01

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	8.804E-15	6.634E-14	7.395E-11	2.826E-10	5.290E-09	1.524E-08
Pa-231	U-235	1.000E+00	2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Pa-231	ΣDOSE(j)		2.827E-05	8.899E-05	2.939E-03	5.573E-03	1.911E-02	2.495E-02
Ac-227	Pu-239	1.000E+00	7.163E-17	9.186E-16	1.809E-11	1.036E-10	3.047E-09	9.332E-09
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Ac-227	ΣDOSE(j)		2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
Pu-240	Pu-240	4.950E-08	3.309E-09	3.308E-09	3.256E-09	3.205E-09	2.821E-09	2.405E-09
Pu-240	Pu-240	1.000E+00	6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
Pu-240	ΣDOSE(j)		6.685E-02	6.682E-02	6.579E-02	6.475E-02	5.699E-02	4.859E-02
U-236	Pu-240	1.000E+00	1.009E-09	3.057E-09	9.853E-08	1.863E-07	6.263E-07	7.948E-07
Th-232	Pu-240	1.000E+00	1.758E-20	1.147E-19	1.139E-16	4.354E-16	8.284E-15	2.446E-14
Th-232	Th-232	1.000E+00	6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Th-232	ΣDOSE(j)		6.324E-02	6.324E-02	6.313E-02	6.301E-02	6.209E-02	6.097E-02
Ra-228	Pu-240	1.000E+00	5.321E-20	8.023E-19	1.031E-14	4.619E-14	1.003E-12	3.011E-12
Ra-228	Th-232	1.000E+00	4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Ra-228	ΣDOSE(j)		4.446E-01	1.288E+00	7.846E+00	7.850E+00	7.736E+00	7.595E+00
Th-228	Pu-240	1.000E+00	3.186E-21	9.062E-20	7.401E-15	3.540E-14	8.064E-13	2.434E-12
Th-228	Th-228	1.000E+00	5.367E+00	3.736E+00	7.267E-08	9.839E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	4.176E-02	2.550E-01	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Th-228	ΣDOSE(j)		5.409E+00	3.991E+00	6.362E+00	6.371E+00	6.279E+00	6.165E+00
Tc-99	Tc-99	1.000E+00	2.387E-01	1.796E-01	1.415E-07	8.374E-14	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.592E-06	3.586E-06	3.291E-06	3.016E-06	1.498E-06	6.247E-07
U-238	U-238	9.999E-01	1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02
U-238	ΣDOSE(j)		1.854E-01	1.851E-01	1.699E-01	1.556E-01	7.731E-02	3.224E-02

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : RESRAD Default Parameters for Resident Farmer Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-RF-QC.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	∑S(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	∑S(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	∑S(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	∑S(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	∑S(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	∑S(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	∑S(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 66.33 seconds

ATTACHMENT 3

SUMMARY REPORT FOR TEEN RECREATIONAL USER

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.160E+00	2.072E+00	DCF2 (1)
B-1	Am-241	3.404E-01	3.404E-01	DCF2 (2)
B-1	Cs-137+D	1.554E-04	1.554E-04	DCF2 (3)
B-1	Np-237+D	1.739E-01	1.739E-01	DCF2 (4)
B-1	Pa-231	5.550E-01	5.550E-01	DCF2 (5)
B-1	Pb-210+D	4.111E-02	2.183E-02	DCF2 (6)
B-1	Pu-238	3.700E-01	3.700E-01	DCF2 (7)
B-1	Pu-239	4.070E-01	4.070E-01	DCF2 (9)
B-1	Pu-240	4.070E-01	4.070E-01	DCF2 (10)
B-1	Ra-226+D	3.712E-02	3.700E-02	DCF2 (12)
B-1	Ra-228+D	5.931E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	5.550E-05	5.550E-05	DCF2 (14)
B-1	Th-228+D	1.905E-01	1.739E-01	DCF2 (15)
B-1	Th-229+D	9.651E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.663E-01	3.663E-01	DCF2 (17)
B-1	Th-232	4.440E-01	4.440E-01	DCF2 (18)
B-1	U-233	4.070E-02	4.070E-02	DCF2 (19)
B-1	U-234	3.700E-02	3.700E-02	DCF2 (20)
B-1	U-235+D	3.404E-02	3.404E-02	DCF2 (21)
B-1	U-236	3.515E-02	3.515E-02	DCF2 (22)
B-1	U-238	3.219E-02	3.219E-02	DCF2 (23)
B-1	U-238+D	3.222E-02	3.219E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	5.865E-03	4.440E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.111E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.960E-03	2.960E-03	DCF3 (5)
D-1	Pb-210+D	1.296E-02	7.030E-03	DCF3 (6)
D-1	Pu-238	8.140E-04	8.140E-04	DCF3 (7)
D-1	Pu-239	8.880E-04	8.880E-04	DCF3 (9)
D-1	Pu-240	8.880E-04	8.880E-04	DCF3 (10)
D-1	Ra-226+D	5.551E-03	5.550E-03	DCF3 (12)
D-1	Ra-228+D	1.961E-02	1.961E-02	DCF3 (13)
D-1	Tc-99	3.034E-06	3.034E-06	DCF3 (14)

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	1.137E-03	3.478E-04	DCF3(15)
D-1	Th-229+D	3.701E-03	1.961E-03	DCF3(16)
D-1	Th-230	8.140E-04	8.140E-04	DCF3(17)
D-1	Th-232	9.250E-04	9.250E-04	DCF3(18)
D-1	U-233	2.886E-04	2.886E-04	DCF3(19)
D-1	U-234	2.738E-04	2.738E-04	DCF3(20)
D-1	U-235+D	2.606E-04	2.590E-04	DCF3(21)
D-1	U-236	2.590E-04	2.590E-04	DCF3(22)
D-1	U-238	2.479E-04	2.479E-04	DCF3(23)
D-1	U-238+D	2.634E-04	2.479E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
 *Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	1.200E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	1.000E+00	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV (1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV (3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE (1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE (2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE (3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV (1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV (2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV (3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY (1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY (2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY (3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET (1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET (2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET (3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Contaminated Zone Dimensions Initial Soil Concentrations, pCi/g

Area:	20000.00 square meters	Am-241	1.000E+00
Thickness:	0.15 meters	Cs-137	1.000E+00
Cover Depth:	0.00 meters	Np-237	1.000E+00
		Pu-238	1.000E+00
		Pu-239	1.000E+00
		Pu-240	1.000E+00
		Tc-99	1.000E+00
		Th-228	1.000E+00
		Th-230	1.000E+00
		Th-232	1.000E+00
		U-234	1.000E+00
		U-235	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	9.227E-01	8.280E-01	1.274E+00	1.233E+00	1.241E+00	1.282E+00
M(t):	9.227E-01	8.280E-01	1.274E+00	1.233E+00	1.241E+00	1.282E+00

Maximum TDOSE(t): 1.287E+00 mrem/yr at t = 35.12 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.512E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.735E-03	0.0021	4.401E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Cs-137	9.572E-02	0.0744	9.222E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.076E-05	0.0000
Np-237	6.999E-02	0.0544	2.248E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.131E-03	0.0009
Pu-238	6.897E-06	0.0000	3.802E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.780E-03	0.0014
Pu-239	1.958E-05	0.0000	5.535E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.571E-03	0.0020
Pu-240	8.810E-06	0.0000	5.520E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0020
Tc-99	3.095E-10	0.0000	2.793E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.250E-10	0.0000
Th-228	1.524E-06	0.0000	6.514E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.278E-09	0.0000
Th-230	1.073E-02	0.0083	5.028E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.848E-03	0.0022
Th-232	9.709E-01	0.7544	9.435E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.227E-02	0.0484
U-234	2.678E-05	0.0000	4.784E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.519E-04	0.0006
U-235	4.870E-02	0.0378	4.530E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-04	0.0006
U-238	1.030E-02	0.0080	4.154E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-04	0.0006
Total	1.209E+00	0.9395	3.732E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.746E-02	0.0602

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.512E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.815E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.578E-02	0.0744
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.115E-02	0.0553
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.825E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.646E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.628E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.348E-10	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.033E+00	0.8029
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.835E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.943E-02	0.0384
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.287E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 1 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_1MREM-RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.899E-03	0.0031	4.666E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-03	0.0023
Cs-137	2.187E-01	0.2370	2.107E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-04	0.0002
Np-237	7.422E-02	0.0804	2.384E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.199E-03	0.0013
Pu-238	9.167E-06	0.0000	5.055E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.367E-03	0.0026
Pu-239	1.975E-05	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Pu-240	8.909E-06	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Tc-99	7.333E-06	0.0000	6.619E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.702E-06	0.0000
Th-228	5.129E-01	0.5559	2.192E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.785E-03	0.0030
Th-230	2.337E-04	0.0003	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.380E-03	0.0026
Th-232	2.599E-02	0.0282	6.155E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.039E-03	0.0065
U-234	2.667E-05	0.0000	5.071E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.988E-04	0.0009
U-235	5.174E-02	0.0561	4.667E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.602E-04	0.0008
U-238	1.095E-02	0.0119	4.417E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.686E-04	0.0008
Total	8.977E-01	0.9729	3.806E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.459E-02	0.0267

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.104E-03	0.0055
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.188E-01	0.2372
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.544E-02	0.0818
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.427E-03	0.0026
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.657E-03	0.0029
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.504E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.157E-01	0.5589
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.664E-03	0.0029
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-02	0.0348
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.305E-04	0.0009
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.250E-02	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.173E-02	0.0127
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.227E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.894E-03	0.0035	4.658E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.155E-03	0.0026
Cs-137	2.136E-01	0.2580	2.058E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.356E-04	0.0002
Np-237	7.410E-02	0.0895	2.380E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.197E-03	0.0014
Pu-238	9.093E-06	0.0000	5.014E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.348E-03	0.0028
Pu-239	1.975E-05	0.0000	5.581E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Pu-240	8.906E-06	0.0000	5.580E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Tc-99	5.505E-06	0.0000	4.969E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.782E-06	0.0000
Th-228	3.570E-01	0.4311	1.526E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-03	0.0023
Th-230	5.361E-04	0.0006	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.388E-03	0.0029
Th-232	8.692E-02	0.1050	6.328E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.227E-02	0.0148
U-234	2.663E-05	0.0000	5.063E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.974E-04	0.0010
U-235	5.165E-02	0.0624	4.660E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.591E-04	0.0009
U-238	1.093E-02	0.0132	4.409E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.673E-04	0.0009
Total	7.977E-01	0.9634	3.751E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.995E-02	0.0362

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.096E-03	0.0062
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.137E-01	0.2581
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.532E-02	0.0910
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.407E-03	0.0029
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0032
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.656E-03	0.0032
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.590E-01	0.4335
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.974E-03	0.0036
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.926E-02	0.1199
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.291E-04	0.0010
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.241E-02	0.0633
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.171E-02	0.0141
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.280E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.668E-03	0.0021	4.293E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-03	0.0016
Cs-137	6.745E-02	0.0529	6.499E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.282E-05	0.0000
Np-237	6.828E-02	0.0536	2.193E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-03	0.0009
Pu-238	6.114E-06	0.0000	3.369E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.578E-03	0.0012
Pu-239	1.952E-05	0.0000	5.515E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.561E-03	0.0020
Pu-240	8.768E-06	0.0000	5.494E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.552E-03	0.0020
Tc-99	4.339E-12	0.0000	3.916E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.557E-12	0.0000
Th-228	6.944E-09	0.0000	2.968E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.771E-11	0.0000
Th-230	1.510E-02	0.0118	5.030E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.122E-03	0.0024
Th-232	9.850E-01	0.7729	9.483E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.293E-02	0.0494
U-234	2.780E-05	0.0000	4.668E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.330E-04	0.0006
U-235	4.749E-02	0.0373	4.505E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.141E-04	0.0006
U-238	1.004E-02	0.0079	4.047E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.043E-04	0.0006
Total	1.196E+00	0.9385	3.670E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.803E-02	0.0612

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.698E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.750E-02	0.0530
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.940E-02	0.0545
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.618E-03	0.0013
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.636E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.899E-12	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.982E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.827E-02	0.0143
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E+00	0.8223
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.654E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-02	0.0378
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-02	0.0084
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.456E-03	0.0020	3.950E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.828E-03	0.0015
Cs-137	2.081E-02	0.0169	2.005E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-05	0.0000
Np-237	6.281E-02	0.0509	2.017E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-03	0.0008
Pu-238	4.079E-06	0.0000	2.246E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.052E-03	0.0009
Pu-239	1.928E-05	0.0000	5.449E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.531E-03	0.0021
Pu-240	8.630E-06	0.0000	5.407E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-03	0.0020
Tc-99	2.567E-18	0.0000	2.317E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.696E-18	0.0000
Th-228	9.403E-17	0.0000	4.018E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.106E-19	0.0000
Th-230	2.945E-02	0.0239	5.040E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.148E-03	0.0034
Th-232	9.861E-01	0.7998	9.476E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.296E-02	0.0511
U-234	3.513E-05	0.0000	4.298E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.731E-04	0.0005
U-235	4.365E-02	0.0354	4.469E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.783E-04	0.0006
U-238	9.196E-03	0.0075	3.709E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.454E-04	0.0005
Total	1.154E+00	0.9364	3.483E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.805E-02	0.0633

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.323E-03	0.0035
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.082E-02	0.0169
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.384E-02	0.0518
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.078E-03	0.0009
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.604E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.574E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.265E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.454E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.365E-02	0.0273
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E+00	0.8509
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.125E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.433E-02	0.0360
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.845E-03	0.0080
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.266E-03	0.0010	2.029E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.390E-04	0.0008
Cs-137	1.705E-06	0.0000	1.643E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-09	0.0000
Np-237	3.221E-02	0.0260	1.035E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.215E-04	0.0004
Pu-238	2.167E-07	0.0000	8.759E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.112E-05	0.0000
Pu-239	1.752E-05	0.0000	4.947E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-03	0.0019
Pu-240	7.596E-06	0.0000	4.759E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.210E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.274E-01	0.1027	5.100E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.170E-02	0.0094
Th-232	9.717E-01	0.7829	9.339E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.204E-02	0.0500
U-234	2.412E-04	0.0002	2.264E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.561E-04	0.0003
U-235	2.252E-02	0.0181	4.317E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-04	0.0004
U-238	4.568E-03	0.0037	1.845E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.210E-04	0.0003
Total	1.160E+00	0.9346	2.814E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.091E-02	0.0652

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.225E-03	0.0018
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.706E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.274E-02	0.0264
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.222E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-03	0.0019
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.265E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-01	0.1121
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E+00	0.8330
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.995E-04	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.301E-02	0.0185
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.891E-03	0.0039
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.241E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.527E-04	0.0004	8.825E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.084E-04	0.0003
Cs-137	1.330E-11	0.0000	1.281E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.442E-15	0.0000
Np-237	1.398E-02	0.0109	4.502E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-04	0.0002
Pu-238	1.919E-07	0.0000	1.561E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.880E-07	0.0000
Pu-239	1.553E-05	0.0000	4.383E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Pu-240	6.476E-06	0.0000	4.057E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.884E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.156E-01	0.1682	5.125E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-02	0.0144
Th-232	9.541E-01	0.7442	9.169E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.092E-02	0.0475
U-234	6.418E-04	0.0005	1.096E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.957E-04	0.0002
U-235	1.026E-02	0.0080	3.985E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-04	0.0003
U-238	1.906E-03	0.0015	7.709E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E-04	0.0001
Total	1.197E+00	0.9338	2.465E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.467E-02	0.0660

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.699E-04	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.331E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.421E-02	0.0111
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.955E-07	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.095E-03	0.0016
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.931E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.342E-01	0.1827
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E+00	0.7918
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.386E-04	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.062E-02	0.0083
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.282E+00	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
 Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Am-241	Np-237+D	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Am-241	U-233	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
Am-241	Th-229+D	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Am-241	ΣDSR(j)		5.104E-03	5.096E-03	4.698E-03	4.323E-03	2.225E-03	9.699E-04
Cs-137+D	Cs-137+D	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Np-237+D	Np-237+D	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237+D	U-233	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
Np-237+D	Th-229+D	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Np-237+D	ΣDSR(j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	U-234	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
Pu-238	Th-230	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Pu-238	Ra-226+D	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Pu-238	Pb-210+D	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pu-238	ΣDSR(j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.222E-05	9.955E-07
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-239	U-235+D	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
Pu-239	Pa-231	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pu-239	Ac-227+D	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Pu-239	ΣDSR(j)		2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	U-236	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Pu-240	Th-232	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Pu-240	Ra-228+D	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Pu-240	Th-228+D	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Pu-240	ΣDSR(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	Ra-226+D	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Th-230	Pb-210+D	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Th-230	ΣDSR(j)		2.664E-03	2.974E-03	1.827E-02	3.365E-02	1.392E-01	2.342E-01

Dose/Source Ratios Summed Over All Pathways
 Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	Ra-228+D	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-232	Th-228+D	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-232	∑DSR(j)		3.209E-02	9.926E-02	1.048E+00	1.049E+00	1.034E+00	1.015E+00
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	Th-230	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
U-234	Ra-226+D	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
U-234	Pb-210+D	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
U-234	∑DSR(j)		8.305E-04	8.291E-04	7.654E-04	7.125E-04	5.995E-04	8.386E-04
U-235+D	U-235+D	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235+D	Pa-231	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
U-235+D	Ac-227+D	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
U-235+D	∑DSR(j)		5.250E-02	5.241E-02	4.821E-02	4.433E-02	2.301E-02	1.062E-02
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238+D	U-238+D	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238+D	U-234	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-238+D	Th-230	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
U-238+D	Ra-226+D	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
U-238+D	Pb-210+D	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
U-238+D	∑DSR(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.041E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 1 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_1MREM-RU-QC.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t=	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241		1.959E+02	1.962E+02	2.129E+02	2.313E+02	4.494E+02	1.031E+03
Cs-137		4.570E+00	4.679E+00	1.482E+01	4.803E+01	5.860E+05	7.515E+10
Np-237		1.326E+01	1.328E+01	1.441E+01	1.566E+01	3.054E+01	7.035E+01
Pu-238		4.120E+02	4.154E+02	6.181E+02	9.273E+02	2.369E+04	1.005E+06
Pu-239		3.748E+02	3.749E+02	3.793E+02	3.840E+02	4.229E+02	4.773E+02
Pu-240		3.763E+02	3.764E+02	3.824E+02	3.885E+02	4.414E+02	5.178E+02
Tc-99		6.648E+04	8.856E+04	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228		1.939E+00	2.786E+00	1.432E+08	*8.195E+14	*8.195E+14	*8.195E+14
Th-230		3.753E+02	3.362E+02	5.473E+01	2.972E+01	7.186E+00	4.270E+00
Th-232		3.116E+01	1.008E+01	9.542E-01	9.532E-01	9.672E-01	9.851E-01
U-234		1.204E+03	1.206E+03	1.306E+03	1.404E+03	1.668E+03	1.192E+03
U-235		1.905E+01	1.908E+01	2.074E+01	2.256E+01	4.347E+01	9.416E+01
U-238		8.528E+01	8.542E+01	9.307E+01	1.016E+02	2.044E+02	4.901E+02

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 35.12 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	5.104E-03	1.959E+02	4.815E-03	2.077E+02
Cs-137	1.000E+00	0.000E+00	2.188E-01	4.570E+00	9.578E-02	1.044E+01
Np-237	1.000E+00	0.000E+00	7.544E-02	1.326E+01	7.115E-02	1.406E+01
Pu-238	1.000E+00	0.000E+00	2.427E-03	4.120E+02	1.825E-03	5.479E+02
Pu-239	1.000E+00	0.000E+00	2.668E-03	3.748E+02	2.646E-03	3.780E+02
Pu-240	1.000E+00	0.000E+00	2.657E-03	3.763E+02	2.628E-03	3.806E+02
Tc-99	1.000E+00	0.000E+00	1.504E-05	6.648E+04	6.348E-10	1.575E+09
Th-228	1.000E+00	0.000E+00	5.157E-01	1.939E+00	1.533E-06	6.525E+05
Th-230	1.000E+00	1.000E+03	2.342E-01	4.270E+00	1.363E-02	7.338E+01
Th-232	1.000E+00	68.5 ± 0.1	1.050E+00	9.524E-01	1.033E+00	9.678E-01
U-234	1.000E+00	1.000E+03	8.386E-04	1.192E+03	7.835E-04	1.276E+03
U-235	1.000E+00	0.000E+00	5.250E-02	1.905E+01	4.943E-02	2.023E+01
U-238	1.000E+00	0.000E+00	1.173E-02	8.528E+01	1.103E-02	9.068E+01

Individual Nuclide Dose Summed Over All Pathways
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Np-237	Am-241	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Np-237	Np-237	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237	∑DOSE (j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
U-233	Am-241	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
U-233	Np-237	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
U-233	∑DOSE (j)		2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.767E-07	7.450E-07
Th-229	Am-241	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Th-229	Np-237	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Th-229	∑DOSE (j)		8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.401E-06	7.947E-06
Cs-137	Cs-137	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	∑DOSE (j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
U-234	Pu-238	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	U-238	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-234	∑DOSE (j)		8.305E-04	8.291E-04	7.611E-04	6.974E-04	3.465E-04	1.445E-04
Th-230	Pu-238	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	U-234	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
Th-230	U-238	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
Th-230	∑DOSE (j)		2.510E-03	2.509E-03	2.505E-03	2.500E-03	2.460E-03	2.408E-03
Ra-226	Pu-238	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Ra-226	Th-230	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Ra-226	U-234	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
Ra-226	U-238	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
Ra-226	∑DOSE (j)		1.548E-04	4.642E-04	1.536E-02	3.004E-02	1.304E-01	2.210E-01
Pb-210	Pu-238	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pb-210	Th-230	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Pb-210	U-234	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
Pb-210	U-238	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
Pb-210	∑DOSE (j)		8.552E-08	5.932E-07	4.087E-04	1.119E-03	6.539E-03	1.146E-02
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
U-235	Pu-239	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
U-235	U-235	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235	∑DOSE (j)		5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03

Individual Nuclide Dose Summed Over All Pathways
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pa-231	U-235	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Pa-231	ΣDOSE(j)		2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Ac-227	Pu-239	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Ac-227	U-235	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Ac-227	ΣDOSE(j)		1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	ΣDOSE(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
U-236	Pu-240	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Th-232	Pu-240	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	ΣDOSE(j)		2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Ra-228	Pu-240	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Ra-228	Th-232	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Ra-228	ΣDOSE(j)		2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-228	Pu-240	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Th-228	Th-228	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-228	ΣDOSE(j)		5.197E-01	3.833E-01	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238	U-238	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238	ΣDOSE(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Individual Nuclide Soil Concentration
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	ΣS(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	ΣS(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	ΣS(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	ΣS(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	ΣS(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 33.14 seconds

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Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_15MREM-RU-QC.RAD

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.160E+00	2.072E+00	DCF2 (1)
B-1	Am-241	3.404E-01	3.404E-01	DCF2 (2)
B-1	Cs-137+D	1.554E-04	1.554E-04	DCF2 (3)
B-1	Np-237+D	1.739E-01	1.739E-01	DCF2 (4)
B-1	Pa-231	5.550E-01	5.550E-01	DCF2 (5)
B-1	Pb-210+D	4.111E-02	2.183E-02	DCF2 (6)
B-1	Pu-238	3.700E-01	3.700E-01	DCF2 (7)
B-1	Pu-239	4.070E-01	4.070E-01	DCF2 (9)
B-1	Pu-240	4.070E-01	4.070E-01	DCF2 (10)
B-1	Ra-226+D	3.712E-02	3.700E-02	DCF2 (12)
B-1	Ra-228+D	5.931E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	5.550E-05	5.550E-05	DCF2 (14)
B-1	Th-228+D	1.905E-01	1.739E-01	DCF2 (15)
B-1	Th-229+D	9.651E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.663E-01	3.663E-01	DCF2 (17)
B-1	Th-232	4.440E-01	4.440E-01	DCF2 (18)
B-1	U-233	4.070E-02	4.070E-02	DCF2 (19)
B-1	U-234	3.700E-02	3.700E-02	DCF2 (20)
B-1	U-235+D	3.404E-02	3.404E-02	DCF2 (21)
B-1	U-236	3.515E-02	3.515E-02	DCF2 (22)
B-1	U-238	3.219E-02	3.219E-02	DCF2 (23)
B-1	U-238+D	3.222E-02	3.219E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	5.865E-03	4.440E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.111E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.960E-03	2.960E-03	DCF3 (5)
D-1	Pb-210+D	1.296E-02	7.030E-03	DCF3 (6)
D-1	Pu-238	8.140E-04	8.140E-04	DCF3 (7)
D-1	Pu-239	8.880E-04	8.880E-04	DCF3 (9)
D-1	Pu-240	8.880E-04	8.880E-04	DCF3 (10)
D-1	Ra-226+D	5.551E-03	5.550E-03	DCF3 (12)
D-1	Ra-228+D	1.961E-02	1.961E-02	DCF3 (13)
D-1	Tc-99	3.034E-06	3.034E-06	DCF3 (14)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	1.137E-03	3.478E-04	DCF3(15)
D-1	Th-229+D	3.701E-03	1.961E-03	DCF3(16)
D-1	Th-230	8.140E-04	8.140E-04	DCF3(17)
D-1	Th-232	9.250E-04	9.250E-04	DCF3(18)
D-1	U-233	2.886E-04	2.886E-04	DCF3(19)
D-1	U-234	2.738E-04	2.738E-04	DCF3(20)
D-1	U-235+D	2.606E-04	2.590E-04	DCF3(21)
D-1	U-236	2.590E-04	2.590E-04	DCF3(22)
D-1	U-238	2.479E-04	2.479E-04	DCF3(23)
D-1	U-238+D	2.634E-04	2.479E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)
D-5				

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	1.200E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	1.000E+00	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV (1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV (3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE (1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE (2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE (3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV (1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV (2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV (3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY (1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY (2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY (3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET (1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET (2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET (3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters
 Thickness: 0.15 meters
 Cover Depth: 0.00 meters

Am-241 1.000E+00
 Cs-137 1.000E+00
 Np-237 1.000E+00
 Pu-238 1.000E+00
 Pu-239 1.000E+00
 Pu-240 1.000E+00
 Tc-99 1.000E+00
 Th-228 1.000E+00
 Th-230 1.000E+00
 Th-232 1.000E+00
 U-234 1.000E+00
 U-235 1.000E+00
 U-238 1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	9.227E-01	8.280E-01	1.274E+00	1.233E+00	1.241E+00	1.282E+00
M(t):	6.151E-02	5.520E-02	8.496E-02	8.219E-02	8.274E-02	8.547E-02

Maximum TDOSE(t): 1.287E+00 mrem/yr at t = 35.12 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.512E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.735E-03	0.0021	4.401E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Cs-137	9.572E-02	0.0744	9.222E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.076E-05	0.0000
Np-237	6.999E-02	0.0544	2.248E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.131E-03	0.0009
Pu-238	6.897E-06	0.0000	3.802E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.780E-03	0.0014
Pu-239	1.958E-05	0.0000	5.535E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.571E-03	0.0020
Pu-240	8.810E-06	0.0000	5.520E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0020
Tc-99	3.095E-10	0.0000	2.793E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.250E-10	0.0000
Th-228	1.524E-06	0.0000	6.514E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.278E-09	0.0000
Th-230	1.073E-02	0.0083	5.028E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.848E-03	0.0022
Th-232	9.709E-01	0.7544	9.435E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.227E-02	0.0484
U-234	2.678E-05	0.0000	4.784E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.519E-04	0.0006
U-235	4.870E-02	0.0378	4.530E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-04	0.0006
U-238	1.030E-02	0.0080	4.154E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-04	0.0006
Total	1.209E+00	0.9395	3.732E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.746E-02	0.0602

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.512E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.815E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.578E-02	0.0744
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.115E-02	0.0553
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.825E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.646E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.628E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.348E-10	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.033E+00	0.8029
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.835E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.943E-02	0.0384
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.287E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.899E-03	0.0031	4.666E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-03	0.0023
Cs-137	2.187E-01	0.2370	2.107E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-04	0.0002
Np-237	7.422E-02	0.0804	2.384E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.199E-03	0.0013
Pu-238	9.167E-06	0.0000	5.055E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.367E-03	0.0026
Pu-239	1.975E-05	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Pu-240	8.909E-06	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Tc-99	7.333E-06	0.0000	6.619E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.702E-06	0.0000
Th-228	5.129E-01	0.5559	2.192E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.785E-03	0.0030
Th-230	2.337E-04	0.0003	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.380E-03	0.0026
Th-232	2.599E-02	0.0282	6.155E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.039E-03	0.0065
U-234	2.667E-05	0.0000	5.071E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.988E-04	0.0009
U-235	5.174E-02	0.0561	4.667E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.602E-04	0.0008
U-238	1.095E-02	0.0119	4.417E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.686E-04	0.0008
Total	8.977E-01	0.9729	3.806E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.459E-02	0.0267

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.104E-03	0.0055
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.188E-01	0.2372
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.544E-02	0.0818
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.427E-03	0.0026
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.657E-03	0.0029
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.504E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.157E-01	0.5589
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.664E-03	0.0029
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-02	0.0348
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.305E-04	0.0009
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.250E-02	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.173E-02	0.0127
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.227E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_15MREM-RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.894E-03	0.0035	4.658E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.155E-03	0.0026
Cs-137	2.136E-01	0.2580	2.058E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.356E-04	0.0002
Np-237	7.410E-02	0.0895	2.380E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.197E-03	0.0014
Pu-238	9.093E-06	0.0000	5.014E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.348E-03	0.0028
Pu-239	1.975E-05	0.0000	5.581E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Pu-240	8.906E-06	0.0000	5.580E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Tc-99	5.505E-06	0.0000	4.969E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.782E-06	0.0000
Th-228	3.570E-01	0.4311	1.526E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-03	0.0023
Th-230	5.361E-04	0.0006	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.388E-03	0.0029
Th-232	8.692E-02	0.1050	6.328E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.227E-02	0.0148
U-234	2.663E-05	0.0000	5.063E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.974E-04	0.0010
U-235	5.165E-02	0.0624	4.660E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.591E-04	0.0009
U-238	1.093E-02	0.0132	4.409E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.673E-04	0.0009
Total	7.977E-01	0.9634	3.751E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.995E-02	0.0362

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.096E-03	0.0062
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.137E-01	0.2581
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.532E-02	0.0910
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.407E-03	0.0029
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0032
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.656E-03	0.0032
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.590E-01	0.4335
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.974E-03	0.0036
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.926E-02	0.1199
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.291E-04	0.0010
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.241E-02	0.0633
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.171E-02	0.0141
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.280E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.668E-03	0.0021	4.293E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-03	0.0016
Cs-137	6.745E-02	0.0529	6.499E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.282E-05	0.0000
Np-237	6.828E-02	0.0536	2.193E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-03	0.0009
Pu-238	6.114E-06	0.0000	3.369E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.578E-03	0.0012
Pu-239	1.952E-05	0.0000	5.515E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.561E-03	0.0020
Pu-240	8.768E-06	0.0000	5.494E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.552E-03	0.0020
Tc-99	4.339E-12	0.0000	3.916E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.557E-12	0.0000
Th-228	6.944E-09	0.0000	2.968E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.771E-11	0.0000
Th-230	1.510E-02	0.0118	5.030E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.122E-03	0.0024
Th-232	9.850E-01	0.7729	9.483E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.293E-02	0.0494
U-234	2.780E-05	0.0000	4.668E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.330E-04	0.0006
U-235	4.749E-02	0.0373	4.505E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.141E-04	0.0006
U-238	1.004E-02	0.0079	4.047E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.043E-04	0.0006
Total	1.196E+00	0.9385	3.670E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.803E-02	0.0612

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.698E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.750E-02	0.0530
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.940E-02	0.0545
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.618E-03	0.0013
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.636E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.899E-12	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.982E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.827E-02	0.0143
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E+00	0.8223
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.654E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-02	0.0378
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-02	0.0084
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.456E-03	0.0020	3.950E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.828E-03	0.0015
Cs-137	2.081E-02	0.0169	2.005E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-05	0.0000
Np-237	6.281E-02	0.0509	2.017E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-03	0.0008
Pu-238	4.079E-06	0.0000	2.246E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.052E-03	0.0009
Pu-239	1.928E-05	0.0000	5.449E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.531E-03	0.0021
Pu-240	8.630E-06	0.0000	5.407E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-03	0.0020
Tc-99	2.567E-18	0.0000	2.317E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.696E-18	0.0000
Th-228	9.403E-17	0.0000	4.018E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.106E-19	0.0000
Th-230	2.945E-02	0.0239	5.040E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.148E-03	0.0034
Th-232	9.861E-01	0.7998	9.476E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.296E-02	0.0511
U-234	3.513E-05	0.0000	4.298E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.731E-04	0.0005
U-235	4.365E-02	0.0354	4.469E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.783E-04	0.0006
U-238	9.196E-03	0.0075	3.709E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.454E-04	0.0005
Total	1.154E+00	0.9364	3.483E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.805E-02	0.0633

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.323E-03	0.0035
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.082E-02	0.0169
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.384E-02	0.0518
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.078E-03	0.0009
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.604E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.574E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.265E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.454E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.365E-02	0.0273
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E+00	0.8509
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.125E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.433E-02	0.0360
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.845E-03	0.0080
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_15MREM-RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.266E-03	0.0010	2.029E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.390E-04	0.0008
Cs-137	1.705E-06	0.0000	1.643E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-09	0.0000
Np-237	3.221E-02	0.0260	1.035E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.215E-04	0.0004
Pu-238	2.167E-07	0.0000	8.759E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.112E-05	0.0000
Pu-239	1.752E-05	0.0000	4.947E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-03	0.0019
Pu-240	7.596E-06	0.0000	4.759E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.210E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.274E-01	0.1027	5.100E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.170E-02	0.0094
Th-232	9.717E-01	0.7829	9.339E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.204E-02	0.0500
U-234	2.412E-04	0.0002	2.264E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.561E-04	0.0003
U-235	2.252E-02	0.0181	4.317E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-04	0.0004
U-238	4.568E-03	0.0037	1.845E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.210E-04	0.0003
Total	1.160E+00	0.9346	2.814E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.091E-02	0.0652

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.225E-03	0.0018
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.706E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.274E-02	0.0264
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.222E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-03	0.0019
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.265E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-01	0.1121
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E+00	0.8330
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.995E-04	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.301E-02	0.0185
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.891E-03	0.0039
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.241E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.527E-04	0.0004	8.825E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.084E-04	0.0003
Cs-137	1.330E-11	0.0000	1.281E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.442E-15	0.0000
Np-237	1.398E-02	0.0109	4.502E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-04	0.0002
Pu-238	1.919E-07	0.0000	1.561E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.880E-07	0.0000
Pu-239	1.553E-05	0.0000	4.383E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Pu-240	6.476E-06	0.0000	4.057E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.884E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.156E-01	0.1682	5.125E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-02	0.0144
Th-232	9.541E-01	0.7442	9.169E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.092E-02	0.0475
U-234	6.418E-04	0.0005	1.096E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.957E-04	0.0002
U-235	1.026E-02	0.0080	3.985E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-04	0.0003
U-238	1.906E-03	0.0015	7.709E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E-04	0.0001
Total	1.197E+00	0.9338	2.465E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.467E-02	0.0660

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.699E-04	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.331E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.421E-02	0.0111
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.955E-07	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.095E-03	0.0016
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.931E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.342E-01	0.1827
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E+00	0.7918
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.386E-04	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.062E-02	0.0083
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.282E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_15MREM-RU-QC.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Am-241	Np-237+D	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Am-241	U-233	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
Am-241	Th-229+D	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Am-241	ΣDSR(j)		5.104E-03	5.096E-03	4.698E-03	4.323E-03	2.225E-03	9.699E-04
Cs-137+D	Cs-137+D	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Np-237+D	Np-237+D	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237+D	U-233	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
Np-237+D	Th-229+D	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Np-237+D	ΣDSR(j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	U-234	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
Pu-238	Th-230	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Pu-238	Ra-226+D	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Pu-238	Pb-210+D	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pu-238	ΣDSR(j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.222E-05	9.955E-07
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-239	U-235+D	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
Pu-239	Pa-231	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pu-239	Ac-227+D	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Pu-239	ΣDSR(j)		2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	U-236	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Pu-240	Th-232	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Pu-240	Ra-228+D	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Pu-240	Th-228+D	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Pu-240	ΣDSR(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	Ra-226+D	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Th-230	Pb-210+D	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Th-230	ΣDSR(j)		2.664E-03	2.974E-03	1.827E-02	3.365E-02	1.392E-01	2.342E-01

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	Ra-228+D	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-232	Th-228+D	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-232	∑DSR(j)		3.209E-02	9.926E-02	1.048E+00	1.049E+00	1.034E+00	1.015E+00
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	Th-230	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
U-234	Ra-226+D	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
U-234	Pb-210+D	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
U-234	∑DSR(j)		8.305E-04	8.291E-04	7.654E-04	7.125E-04	5.995E-04	8.386E-04
U-235+D	U-235+D	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235+D	Pa-231	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
U-235+D	Ac-227+D	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
U-235+D	∑DSR(j)		5.250E-02	5.241E-02	4.821E-02	4.433E-02	2.301E-02	1.062E-02
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238+D	U-238+D	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238+D	U-234	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-238+D	Th-230	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
U-238+D	Ra-226+D	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
U-238+D	Pb-210+D	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
U-238+D	∑DSR(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.041E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	2.939E+03	2.944E+03	3.193E+03	3.470E+03	6.742E+03	1.547E+04
Cs-137	6.855E+01	7.018E+01	2.222E+02	7.204E+02	8.790E+06	1.127E+12
Np-237	1.988E+02	1.992E+02	2.161E+02	2.350E+02	4.581E+02	1.055E+03
Pu-238	6.181E+03	6.231E+03	9.272E+03	1.391E+04	3.553E+05	1.507E+07
Pu-239	5.622E+03	5.623E+03	5.690E+03	5.759E+03	6.344E+03	7.160E+03
Pu-240	5.645E+03	5.647E+03	5.736E+03	5.828E+03	6.621E+03	7.766E+03
Tc-99	9.972E+05	1.328E+06	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	2.909E+01	4.179E+01	2.148E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	5.630E+03	5.043E+03	8.209E+02	4.458E+02	1.078E+02	6.405E+01
Th-232	4.674E+02	1.511E+02	1.431E+01	1.430E+01	1.451E+01	1.478E+01
U-234	1.806E+04	1.809E+04	1.960E+04	2.105E+04	2.502E+04	1.789E+04
U-235	2.857E+02	2.862E+02	3.112E+02	3.384E+02	6.520E+02	1.412E+03
U-238	1.279E+03	1.281E+03	1.396E+03	1.524E+03	3.067E+03	7.351E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 35.12 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	5.104E-03	2.939E+03	4.815E-03	3.115E+03
Cs-137	1.000E+00	0.000E+00	2.188E-01	6.855E+01	9.578E-02	1.566E+02
Np-237	1.000E+00	0.000E+00	7.544E-02	1.988E+02	7.115E-02	2.108E+02
Pu-238	1.000E+00	0.000E+00	2.427E-03	6.181E+03	1.825E-03	8.218E+03
Pu-239	1.000E+00	0.000E+00	2.668E-03	5.622E+03	2.646E-03	5.670E+03
Pu-240	1.000E+00	0.000E+00	2.657E-03	5.645E+03	2.628E-03	5.708E+03
Tc-99	1.000E+00	0.000E+00	1.504E-05	9.972E+05	6.348E-10	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.157E-01	2.909E+01	1.533E-06	9.787E+06
Th-230	1.000E+00	1.000E+03	2.342E-01	6.405E+01	1.363E-02	1.101E+03
Th-232	1.000E+00	68.5 ± 0.1	1.050E+00	1.429E+01	1.033E+00	1.452E+01
U-234	1.000E+00	1.000E+03	8.386E-04	1.789E+04	7.835E-04	1.914E+04
U-235	1.000E+00	0.000E+00	5.250E-02	2.857E+02	4.943E-02	3.034E+02
U-238	1.000E+00	0.000E+00	1.173E-02	1.279E+03	1.103E-02	1.360E+03

*At specific activity limit

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Np-237	Am-241	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Np-237	Np-237	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237	∑DOSE (j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
U-233	Am-241	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
U-233	Np-237	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
U-233	∑DOSE (j)		2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.767E-07	7.450E-07
Th-229	Am-241	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Th-229	Np-237	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Th-229	∑DOSE (j)		8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.401E-06	7.947E-06
Cs-137	Cs-137	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	∑DOSE (j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
U-234	Pu-238	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	U-238	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-234	∑DOSE (j)		8.305E-04	8.291E-04	7.611E-04	6.974E-04	3.465E-04	1.445E-04
Th-230	Pu-238	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	U-234	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
Th-230	U-238	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
Th-230	∑DOSE (j)		2.510E-03	2.509E-03	2.505E-03	2.500E-03	2.460E-03	2.408E-03
Ra-226	Pu-238	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Ra-226	Th-230	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Ra-226	U-234	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
Ra-226	U-238	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
Ra-226	∑DOSE (j)		1.548E-04	4.642E-04	1.536E-02	3.004E-02	1.304E-01	2.210E-01
Pb-210	Pu-238	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pb-210	Th-230	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Pb-210	U-234	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
Pb-210	U-238	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
Pb-210	∑DOSE (j)		8.552E-08	5.932E-07	4.087E-04	1.119E-03	6.539E-03	1.146E-02
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
U-235	Pu-239	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
U-235	U-235	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235	∑DOSE (j)		5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pa-231	U-235	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Pa-231	ΣDOSE(j)		2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Ac-227	Pu-239	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Ac-227	U-235	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Ac-227	ΣDOSE(j)		1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	ΣDOSE(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
U-236	Pu-240	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Th-232	Pu-240	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	ΣDOSE(j)		2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Ra-228	Pu-240	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Ra-228	Th-232	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Ra-228	ΣDOSE(j)		2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-228	Pu-240	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Th-228	Th-228	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-228	ΣDOSE(j)		5.197E-01	3.833E-01	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238	U-238	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238	ΣDOSE(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : RESRAD Parameters for Recreational User Outside Limited Area 15 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	∑S(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	∑S(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	∑S(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	∑S(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	∑S(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	∑S(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	∑S(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 33.59 seconds

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Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1(51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1(54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1(55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1(57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1(60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.160E+00	2.072E+00	DCF2(1)
B-1	Am-241	3.404E-01	3.404E-01	DCF2(2)
B-1	Cs-137+D	1.554E-04	1.554E-04	DCF2(3)
B-1	Np-237+D	1.739E-01	1.739E-01	DCF2(4)
B-1	Pa-231	5.550E-01	5.550E-01	DCF2(5)
B-1	Pb-210+D	4.111E-02	2.183E-02	DCF2(6)
B-1	Pu-238	3.700E-01	3.700E-01	DCF2(7)
B-1	Pu-239	4.070E-01	4.070E-01	DCF2(9)
B-1	Pu-240	4.070E-01	4.070E-01	DCF2(10)
B-1	Ra-226+D	3.712E-02	3.700E-02	DCF2(12)
B-1	Ra-228+D	5.931E-02	5.920E-02	DCF2(13)
B-1	Tc-99	5.550E-05	5.550E-05	DCF2(14)
B-1	Th-228+D	1.905E-01	1.739E-01	DCF2(15)
B-1	Th-229+D	9.651E-01	8.880E-01	DCF2(16)
B-1	Th-230	3.663E-01	3.663E-01	DCF2(17)
B-1	Th-232	4.440E-01	4.440E-01	DCF2(18)
B-1	U-233	4.070E-02	4.070E-02	DCF2(19)
B-1	U-234	3.700E-02	3.700E-02	DCF2(20)
B-1	U-235+D	3.404E-02	3.404E-02	DCF2(21)
B-1	U-236	3.515E-02	3.515E-02	DCF2(22)
B-1	U-238	3.219E-02	3.219E-02	DCF2(23)
B-1	U-238+D	3.222E-02	3.219E-02	DCF2(24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	5.865E-03	4.440E-03	DCF3(1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3(2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(3)
D-1	Np-237+D	4.111E-04	4.070E-04	DCF3(4)
D-1	Pa-231	2.960E-03	2.960E-03	DCF3(5)
D-1	Pb-210+D	1.296E-02	7.030E-03	DCF3(6)
D-1	Pu-238	8.140E-04	8.140E-04	DCF3(7)
D-1	Pu-239	8.880E-04	8.880E-04	DCF3(9)
D-1	Pu-240	8.880E-04	8.880E-04	DCF3(10)
D-1	Ra-226+D	5.551E-03	5.550E-03	DCF3(12)
D-1	Ra-228+D	1.961E-02	1.961E-02	DCF3(13)
D-1	Tc-99	3.034E-06	3.034E-06	DCF3(14)

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	1.137E-03	3.478E-04	DCF3(15)
D-1	Th-229+D	3.701E-03	1.961E-03	DCF3(16)
D-1	Th-230	8.140E-04	8.140E-04	DCF3(17)
D-1	Th-232	9.250E-04	9.250E-04	DCF3(18)
D-1	U-233	2.886E-04	2.886E-04	DCF3(19)
D-1	U-234	2.738E-04	2.738E-04	DCF3(20)
D-1	U-235+D	2.606E-04	2.590E-04	DCF3(21)
D-1	U-236	2.590E-04	2.590E-04	DCF3(22)
D-1	U-238	2.479E-04	2.479E-04	DCF3(23)
D-1	U-238+D	2.634E-04	2.479E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)
D-5				

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	1.200E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	1.000E+00	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV (1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV (3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE (1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE (2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE (3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV (1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV (2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV (3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY (1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY (2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY (3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET (1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET (2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET (3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

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Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

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Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters
 Thickness: 0.15 meters
 Cover Depth: 0.00 meters

Am-241 1.000E+00
 Cs-137 1.000E+00
 Np-237 1.000E+00
 Pu-238 1.000E+00
 Pu-239 1.000E+00
 Pu-240 1.000E+00
 Tc-99 1.000E+00
 Th-228 1.000E+00
 Th-230 1.000E+00
 Th-232 1.000E+00
 U-234 1.000E+00
 U-235 1.000E+00
 U-238 1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	9.227E-01	8.280E-01	1.274E+00	1.233E+00	1.241E+00	1.282E+00
M(t):	3.691E-02	3.312E-02	5.098E-02	4.932E-02	4.965E-02	5.128E-02

Maximum TDOSE(t): 1.287E+00 mrem/yr at t = 35.12 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.512E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.735E-03	0.0021	4.401E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Cs-137	9.572E-02	0.0744	9.222E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.076E-05	0.0000
Np-237	6.999E-02	0.0544	2.248E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.131E-03	0.0009
Pu-238	6.897E-06	0.0000	3.802E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.780E-03	0.0014
Pu-239	1.958E-05	0.0000	5.535E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.571E-03	0.0020
Pu-240	8.810E-06	0.0000	5.520E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0020
Tc-99	3.095E-10	0.0000	2.793E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.250E-10	0.0000
Th-228	1.524E-06	0.0000	6.514E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.278E-09	0.0000
Th-230	1.073E-02	0.0083	5.028E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.848E-03	0.0022
Th-232	9.709E-01	0.7544	9.435E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.227E-02	0.0484
U-234	2.678E-05	0.0000	4.784E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.519E-04	0.0006
U-235	4.870E-02	0.0378	4.530E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-04	0.0006
U-238	1.030E-02	0.0080	4.154E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-04	0.0006
Total	1.209E+00	0.9395	3.732E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.746E-02	0.0602

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_25MREM-RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.512E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.815E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.578E-02	0.0744
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.115E-02	0.0553
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.825E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.646E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.628E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.348E-10	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.033E+00	0.8029
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.835E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.943E-02	0.0384
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.287E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_25MREM-RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.899E-03	0.0031	4.666E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-03	0.0023
Cs-137	2.187E-01	0.2370	2.107E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-04	0.0002
Np-237	7.422E-02	0.0804	2.384E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.199E-03	0.0013
Pu-238	9.167E-06	0.0000	5.055E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.367E-03	0.0026
Pu-239	1.975E-05	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Pu-240	8.909E-06	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Tc-99	7.333E-06	0.0000	6.619E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.702E-06	0.0000
Th-228	5.129E-01	0.5559	2.192E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.785E-03	0.0030
Th-230	2.337E-04	0.0003	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.380E-03	0.0026
Th-232	2.599E-02	0.0282	6.155E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.039E-03	0.0065
U-234	2.667E-05	0.0000	5.071E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.988E-04	0.0009
U-235	5.174E-02	0.0561	4.667E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.602E-04	0.0008
U-238	1.095E-02	0.0119	4.417E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.686E-04	0.0008
Total	8.977E-01	0.9729	3.806E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.459E-02	0.0267

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.104E-03	0.0055
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.188E-01	0.2372
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.544E-02	0.0818
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.427E-03	0.0026
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.657E-03	0.0029
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.504E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.157E-01	0.5589
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.664E-03	0.0029
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-02	0.0348
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.305E-04	0.0009
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.250E-02	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.173E-02	0.0127
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.227E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_25MREM-RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.894E-03	0.0035	4.658E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.155E-03	0.0026
Cs-137	2.136E-01	0.2580	2.058E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.356E-04	0.0002
Np-237	7.410E-02	0.0895	2.380E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.197E-03	0.0014
Pu-238	9.093E-06	0.0000	5.014E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.348E-03	0.0028
Pu-239	1.975E-05	0.0000	5.581E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Pu-240	8.906E-06	0.0000	5.580E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Tc-99	5.505E-06	0.0000	4.969E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.782E-06	0.0000
Th-228	3.570E-01	0.4311	1.526E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-03	0.0023
Th-230	5.361E-04	0.0006	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.388E-03	0.0029
Th-232	8.692E-02	0.1050	6.328E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.227E-02	0.0148
U-234	2.663E-05	0.0000	5.063E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.974E-04	0.0010
U-235	5.165E-02	0.0624	4.660E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.591E-04	0.0009
U-238	1.093E-02	0.0132	4.409E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.673E-04	0.0009
Total	7.977E-01	0.9634	3.751E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.995E-02	0.0362

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.096E-03	0.0062
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.137E-01	0.2581
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.532E-02	0.0910
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.407E-03	0.0029
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0032
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.656E-03	0.0032
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.590E-01	0.4335
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.974E-03	0.0036
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.926E-02	0.1199
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.291E-04	0.0010
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.241E-02	0.0633
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.171E-02	0.0141
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.280E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_25MREM-RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.668E-03	0.0021	4.293E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-03	0.0016
Cs-137	6.745E-02	0.0529	6.499E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.282E-05	0.0000
Np-237	6.828E-02	0.0536	2.193E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-03	0.0009
Pu-238	6.114E-06	0.0000	3.369E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.578E-03	0.0012
Pu-239	1.952E-05	0.0000	5.515E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.561E-03	0.0020
Pu-240	8.768E-06	0.0000	5.494E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.552E-03	0.0020
Tc-99	4.339E-12	0.0000	3.916E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.557E-12	0.0000
Th-228	6.944E-09	0.0000	2.968E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.771E-11	0.0000
Th-230	1.510E-02	0.0118	5.030E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.122E-03	0.0024
Th-232	9.850E-01	0.7729	9.483E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.293E-02	0.0494
U-234	2.780E-05	0.0000	4.668E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.330E-04	0.0006
U-235	4.749E-02	0.0373	4.505E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.141E-04	0.0006
U-238	1.004E-02	0.0079	4.047E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.043E-04	0.0006
Total	1.196E+00	0.9385	3.670E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.803E-02	0.0612

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.698E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.750E-02	0.0530
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.940E-02	0.0545
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.618E-03	0.0013
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.636E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.899E-12	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.982E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.827E-02	0.0143
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E+00	0.8223
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.654E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-02	0.0378
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-02	0.0084
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.456E-03	0.0020	3.950E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.828E-03	0.0015
Cs-137	2.081E-02	0.0169	2.005E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-05	0.0000
Np-237	6.281E-02	0.0509	2.017E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-03	0.0008
Pu-238	4.079E-06	0.0000	2.246E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.052E-03	0.0009
Pu-239	1.928E-05	0.0000	5.449E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.531E-03	0.0021
Pu-240	8.630E-06	0.0000	5.407E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-03	0.0020
Tc-99	2.567E-18	0.0000	2.317E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.696E-18	0.0000
Th-228	9.403E-17	0.0000	4.018E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.106E-19	0.0000
Th-230	2.945E-02	0.0239	5.040E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.148E-03	0.0034
Th-232	9.861E-01	0.7998	9.476E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.296E-02	0.0511
U-234	3.513E-05	0.0000	4.298E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.731E-04	0.0005
U-235	4.365E-02	0.0354	4.469E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.783E-04	0.0006
U-238	9.196E-03	0.0075	3.709E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.454E-04	0.0005
Total	1.154E+00	0.9364	3.483E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.805E-02	0.0633

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.323E-03	0.0035
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.082E-02	0.0169
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.384E-02	0.0518
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.078E-03	0.0009
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.604E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.574E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.265E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.454E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.365E-02	0.0273
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E+00	0.8509
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.125E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.433E-02	0.0360
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.845E-03	0.0080
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_25MREM-RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.266E-03	0.0010	2.029E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.390E-04	0.0008
Cs-137	1.705E-06	0.0000	1.643E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-09	0.0000
Np-237	3.221E-02	0.0260	1.035E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.215E-04	0.0004
Pu-238	2.167E-07	0.0000	8.759E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.112E-05	0.0000
Pu-239	1.752E-05	0.0000	4.947E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-03	0.0019
Pu-240	7.596E-06	0.0000	4.759E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.210E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.274E-01	0.1027	5.100E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.170E-02	0.0094
Th-232	9.717E-01	0.7829	9.339E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.204E-02	0.0500
U-234	2.412E-04	0.0002	2.264E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.561E-04	0.0003
U-235	2.252E-02	0.0181	4.317E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-04	0.0004
U-238	4.568E-03	0.0037	1.845E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.210E-04	0.0003
Total	1.160E+00	0.9346	2.814E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.091E-02	0.0652

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.225E-03	0.0018
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.706E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.274E-02	0.0264
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.222E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-03	0.0019
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.265E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-01	0.1121
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E+00	0.8330
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.995E-04	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.301E-02	0.0185
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.891E-03	0.0039
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.241E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_25MREM-RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.527E-04	0.0004	8.825E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.084E-04	0.0003
Cs-137	1.330E-11	0.0000	1.281E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.442E-15	0.0000
Np-237	1.398E-02	0.0109	4.502E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-04	0.0002
Pu-238	1.919E-07	0.0000	1.561E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.880E-07	0.0000
Pu-239	1.553E-05	0.0000	4.383E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Pu-240	6.476E-06	0.0000	4.057E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.884E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.156E-01	0.1682	5.125E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-02	0.0144
Th-232	9.541E-01	0.7442	9.169E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.092E-02	0.0475
U-234	6.418E-04	0.0005	1.096E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.957E-04	0.0002
U-235	1.026E-02	0.0080	3.985E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-04	0.0003
U-238	1.906E-03	0.0015	7.709E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E-04	0.0001
Total	1.197E+00	0.9338	2.465E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.467E-02	0.0660

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.699E-04	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.331E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.421E-02	0.0111
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.955E-07	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.095E-03	0.0016
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.931E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.342E-01	0.1827
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E+00	0.7918
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.386E-04	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.062E-02	0.0083
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.282E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Am-241	Np-237+D	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Am-241	U-233	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
Am-241	Th-229+D	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Am-241	ΣDSR(j)		5.104E-03	5.096E-03	4.698E-03	4.323E-03	2.225E-03	9.699E-04
Cs-137+D	Cs-137+D	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Np-237+D	Np-237+D	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237+D	U-233	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
Np-237+D	Th-229+D	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Np-237+D	ΣDSR(j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	U-234	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
Pu-238	Th-230	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Pu-238	Ra-226+D	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Pu-238	Pb-210+D	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pu-238	ΣDSR(j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.222E-05	9.955E-07
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-239	U-235+D	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
Pu-239	Pa-231	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pu-239	Ac-227+D	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Pu-239	ΣDSR(j)		2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	U-236	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Pu-240	Th-232	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Pu-240	Ra-228+D	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Pu-240	Th-228+D	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Pu-240	ΣDSR(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	Ra-226+D	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Th-230	Pb-210+D	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Th-230	ΣDSR(j)		2.664E-03	2.974E-03	1.827E-02	3.365E-02	1.392E-01	2.342E-01

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	Ra-228+D	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-232	Th-228+D	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-232	∑DSR(j)		3.209E-02	9.926E-02	1.048E+00	1.049E+00	1.034E+00	1.015E+00
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	Th-230	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
U-234	Ra-226+D	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
U-234	Pb-210+D	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
U-234	∑DSR(j)		8.305E-04	8.291E-04	7.654E-04	7.125E-04	5.995E-04	8.386E-04
U-235+D	U-235+D	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235+D	Pa-231	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
U-235+D	Ac-227+D	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
U-235+D	∑DSR(j)		5.250E-02	5.241E-02	4.821E-02	4.433E-02	2.301E-02	1.062E-02
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238+D	U-238+D	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238+D	U-234	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-238+D	Th-230	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
U-238+D	Ra-226+D	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
U-238+D	Pb-210+D	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
U-238+D	∑DSR(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.041E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	4.898E+03	4.906E+03	5.322E+03	5.783E+03	1.124E+04	2.578E+04
Cs-137	1.142E+02	1.170E+02	3.704E+02	1.201E+03	1.465E+07	1.879E+12
Np-237	3.314E+02	3.319E+02	3.602E+02	3.916E+02	7.635E+02	1.759E+03
Pu-238	1.030E+04	1.038E+04	1.545E+04	2.318E+04	5.922E+05	2.511E+07
Pu-239	9.370E+03	9.372E+03	9.484E+03	9.599E+03	1.057E+04	1.193E+04
Pu-240	9.408E+03	9.411E+03	9.559E+03	9.713E+03	1.104E+04	1.294E+04
Tc-99	1.662E+06	2.214E+06	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	4.848E+01	6.965E+01	3.580E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	9.383E+03	8.406E+03	1.368E+03	7.430E+02	1.796E+02	1.067E+02
Th-232	7.791E+02	2.519E+02	2.386E+01	2.383E+01	2.418E+01	2.463E+01
U-234	3.010E+04	3.015E+04	3.266E+04	3.509E+04	4.170E+04	2.981E+04
U-235	4.762E+02	4.770E+02	5.186E+02	5.640E+02	1.087E+03	2.354E+03
U-238	2.132E+03	2.136E+03	2.327E+03	2.539E+03	5.111E+03	1.225E+04

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 35.12 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	5.104E-03	4.898E+03	4.815E-03	5.192E+03
Cs-137	1.000E+00	0.000E+00	2.188E-01	1.142E+02	9.578E-02	2.610E+02
Np-237	1.000E+00	0.000E+00	7.544E-02	3.314E+02	7.115E-02	3.514E+02
Pu-238	1.000E+00	0.000E+00	2.427E-03	1.030E+04	1.825E-03	1.370E+04
Pu-239	1.000E+00	0.000E+00	2.668E-03	9.370E+03	2.646E-03	9.449E+03
Pu-240	1.000E+00	0.000E+00	2.657E-03	9.408E+03	2.628E-03	9.514E+03
Tc-99	1.000E+00	0.000E+00	1.504E-05	1.662E+06	6.348E-10	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.157E-01	4.848E+01	1.533E-06	1.631E+07
Th-230	1.000E+00	1.000E+03	2.342E-01	1.067E+02	1.363E-02	1.834E+03
Th-232	1.000E+00	68.5 ± 0.1	1.050E+00	2.381E+01	1.033E+00	2.420E+01
U-234	1.000E+00	1.000E+03	8.386E-04	2.981E+04	7.835E-04	3.191E+04
U-235	1.000E+00	0.000E+00	5.250E-02	4.762E+02	4.943E-02	5.057E+02
U-238	1.000E+00	0.000E+00	1.173E-02	2.132E+03	1.103E-02	2.267E+03

*At specific activity limit

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_25MREM-RU-QC.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Np-237	Am-241	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Np-237	Np-237	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237	∑DOSE (j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
U-233	Am-241	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
U-233	Np-237	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
U-233	∑DOSE (j)		2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.767E-07	7.450E-07
Th-229	Am-241	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Th-229	Np-237	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Th-229	∑DOSE (j)		8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.401E-06	7.947E-06
Cs-137	Cs-137	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	∑DOSE (j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
U-234	Pu-238	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	U-238	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-234	∑DOSE (j)		8.305E-04	8.291E-04	7.611E-04	6.974E-04	3.465E-04	1.445E-04
Th-230	Pu-238	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	U-234	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
Th-230	U-238	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
Th-230	∑DOSE (j)		2.510E-03	2.509E-03	2.505E-03	2.500E-03	2.460E-03	2.408E-03
Ra-226	Pu-238	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Ra-226	Th-230	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Ra-226	U-234	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
Ra-226	U-238	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
Ra-226	∑DOSE (j)		1.548E-04	4.642E-04	1.536E-02	3.004E-02	1.304E-01	2.210E-01
Pb-210	Pu-238	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pb-210	Th-230	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Pb-210	U-234	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
Pb-210	U-238	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
Pb-210	∑DOSE (j)		8.552E-08	5.932E-07	4.087E-04	1.119E-03	6.539E-03	1.146E-02
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
U-235	Pu-239	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
U-235	U-235	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235	∑DOSE (j)		5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pa-231	U-235	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Pa-231	ΣDOSE(j)		2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Ac-227	Pu-239	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Ac-227	U-235	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Ac-227	ΣDOSE(j)		1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	ΣDOSE(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
U-236	Pu-240	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Th-232	Pu-240	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	ΣDOSE(j)		2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Ra-228	Pu-240	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Ra-228	Th-232	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Ra-228	ΣDOSE(j)		2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-228	Pu-240	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Th-228	Th-228	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-228	ΣDOSE(j)		5.197E-01	3.833E-01	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238	U-238	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238	ΣDOSE(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_25MREM-RU-QC.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : RESRAD Parameters for Recreational User Outside Limited Area 25 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pu-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pu-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pu-231	∑S(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	∑S(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	∑S(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	∑S(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	∑S(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	∑S(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	∑S(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 33.64 seconds

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1(51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1(54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1(55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1(57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1(60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.160E+00	2.072E+00	DCF2(1)
B-1	Am-241	3.404E-01	3.404E-01	DCF2(2)
B-1	Cs-137+D	1.554E-04	1.554E-04	DCF2(3)
B-1	Np-237+D	1.739E-01	1.739E-01	DCF2(4)
B-1	Pa-231	5.550E-01	5.550E-01	DCF2(5)
B-1	Pb-210+D	4.111E-02	2.183E-02	DCF2(6)
B-1	Pu-238	3.700E-01	3.700E-01	DCF2(7)
B-1	Pu-239	4.070E-01	4.070E-01	DCF2(9)
B-1	Pu-240	4.070E-01	4.070E-01	DCF2(10)
B-1	Ra-226+D	3.712E-02	3.700E-02	DCF2(12)
B-1	Ra-228+D	5.931E-02	5.920E-02	DCF2(13)
B-1	Tc-99	5.550E-05	5.550E-05	DCF2(14)
B-1	Th-228+D	1.905E-01	1.739E-01	DCF2(15)
B-1	Th-229+D	9.651E-01	8.880E-01	DCF2(16)
B-1	Th-230	3.663E-01	3.663E-01	DCF2(17)
B-1	Th-232	4.440E-01	4.440E-01	DCF2(18)
B-1	U-233	4.070E-02	4.070E-02	DCF2(19)
B-1	U-234	3.700E-02	3.700E-02	DCF2(20)
B-1	U-235+D	3.404E-02	3.404E-02	DCF2(21)
B-1	U-236	3.515E-02	3.515E-02	DCF2(22)
B-1	U-238	3.219E-02	3.219E-02	DCF2(23)
B-1	U-238+D	3.222E-02	3.219E-02	DCF2(24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	5.865E-03	4.440E-03	DCF3(1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3(2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(3)
D-1	Np-237+D	4.111E-04	4.070E-04	DCF3(4)
D-1	Pa-231	2.960E-03	2.960E-03	DCF3(5)
D-1	Pb-210+D	1.296E-02	7.030E-03	DCF3(6)
D-1	Pu-238	8.140E-04	8.140E-04	DCF3(7)
D-1	Pu-239	8.880E-04	8.880E-04	DCF3(9)
D-1	Pu-240	8.880E-04	8.880E-04	DCF3(10)
D-1	Ra-226+D	5.551E-03	5.550E-03	DCF3(12)
D-1	Ra-228+D	1.961E-02	1.961E-02	DCF3(13)
D-1	Tc-99	3.034E-06	3.034E-06	DCF3(14)

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	1.137E-03	3.478E-04	DCF3(15)
D-1	Th-229+D	3.701E-03	1.961E-03	DCF3(16)
D-1	Th-230	8.140E-04	8.140E-04	DCF3(17)
D-1	Th-232	9.250E-04	9.250E-04	DCF3(18)
D-1	U-233	2.886E-04	2.886E-04	DCF3(19)
D-1	U-234	2.738E-04	2.738E-04	DCF3(20)
D-1	U-235+D	2.606E-04	2.590E-04	DCF3(21)
D-1	U-236	2.590E-04	2.590E-04	DCF3(22)
D-1	U-238	2.479E-04	2.479E-04	DCF3(23)
D-1	U-238+D	2.634E-04	2.479E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)
D-5				

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+02	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	1.200E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	1.000E+00	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV (1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV (3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE (1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE (2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE (3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV (1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV (2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV (3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY (1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY (2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY (3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET (1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET (2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET (3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters	Am-241	1.000E+00
Thickness: 0.15 meters	Cs-137	1.000E+00
Cover Depth: 0.00 meters	Np-237	1.000E+00
	Pu-238	1.000E+00
	Pu-239	1.000E+00
	Pu-240	1.000E+00
	Tc-99	1.000E+00
	Th-228	1.000E+00
	Th-230	1.000E+00
	Th-232	1.000E+00
	U-234	1.000E+00
	U-235	1.000E+00
	U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	9.227E-01	8.280E-01	1.274E+00	1.233E+00	1.241E+00	1.282E+00
M(t):	9.227E-03	8.280E-03	1.274E-02	1.233E-02	1.241E-02	1.282E-02

Maximum TDOSE(t): 1.287E+00 mrem/yr at t = 35.12 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.512E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.735E-03	0.0021	4.401E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Cs-137	9.572E-02	0.0744	9.222E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.076E-05	0.0000
Np-237	6.999E-02	0.0544	2.248E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.131E-03	0.0009
Pu-238	6.897E-06	0.0000	3.802E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.780E-03	0.0014
Pu-239	1.958E-05	0.0000	5.535E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.571E-03	0.0020
Pu-240	8.810E-06	0.0000	5.520E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0020
Tc-99	3.095E-10	0.0000	2.793E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.250E-10	0.0000
Th-228	1.524E-06	0.0000	6.514E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.278E-09	0.0000
Th-230	1.073E-02	0.0083	5.028E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.848E-03	0.0022
Th-232	9.709E-01	0.7544	9.435E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.227E-02	0.0484
U-234	2.678E-05	0.0000	4.784E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.519E-04	0.0006
U-235	4.870E-02	0.0378	4.530E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-04	0.0006
U-238	1.030E-02	0.0080	4.154E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-04	0.0006
Total	1.209E+00	0.9395	3.732E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.746E-02	0.0602

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.512E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.815E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.578E-02	0.0744
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.115E-02	0.0553
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.825E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.646E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.628E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.348E-10	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.033E+00	0.8029
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.835E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.943E-02	0.0384
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.287E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.899E-03	0.0031	4.666E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-03	0.0023
Cs-137	2.187E-01	0.2370	2.107E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-04	0.0002
Np-237	7.422E-02	0.0804	2.384E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.199E-03	0.0013
Pu-238	9.167E-06	0.0000	5.055E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.367E-03	0.0026
Pu-239	1.975E-05	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Pu-240	8.909E-06	0.0000	5.582E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.593E-03	0.0028
Tc-99	7.333E-06	0.0000	6.619E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.702E-06	0.0000
Th-228	5.129E-01	0.5559	2.192E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.785E-03	0.0030
Th-230	2.337E-04	0.0003	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.380E-03	0.0026
Th-232	2.599E-02	0.0282	6.155E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.039E-03	0.0065
U-234	2.667E-05	0.0000	5.071E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.988E-04	0.0009
U-235	5.174E-02	0.0561	4.667E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.602E-04	0.0008
U-238	1.095E-02	0.0119	4.417E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.686E-04	0.0008
Total	8.977E-01	0.9729	3.806E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.459E-02	0.0267

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.104E-03	0.0055
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.188E-01	0.2372
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.544E-02	0.0818
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.427E-03	0.0026
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0029
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.657E-03	0.0029
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.504E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.157E-01	0.5589
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.664E-03	0.0029
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-02	0.0348
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.305E-04	0.0009
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.250E-02	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.173E-02	0.0127
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.227E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.894E-03	0.0035	4.658E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.155E-03	0.0026
Cs-137	2.136E-01	0.2580	2.058E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.356E-04	0.0002
Np-237	7.410E-02	0.0895	2.380E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.197E-03	0.0014
Pu-238	9.093E-06	0.0000	5.014E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.348E-03	0.0028
Pu-239	1.975E-05	0.0000	5.581E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Pu-240	8.906E-06	0.0000	5.580E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.592E-03	0.0031
Tc-99	5.505E-06	0.0000	4.969E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.782E-06	0.0000
Th-228	3.570E-01	0.4311	1.526E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-03	0.0023
Th-230	5.361E-04	0.0006	5.025E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.388E-03	0.0029
Th-232	8.692E-02	0.1050	6.328E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.227E-02	0.0148
U-234	2.663E-05	0.0000	5.063E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.974E-04	0.0010
U-235	5.165E-02	0.0624	4.660E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.591E-04	0.0009
U-238	1.093E-02	0.0132	4.409E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.673E-04	0.0009
Total	7.977E-01	0.9634	3.751E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.995E-02	0.0362

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.096E-03	0.0062
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.137E-01	0.2581
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.532E-02	0.0910
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.407E-03	0.0029
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-03	0.0032
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.656E-03	0.0032
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.590E-01	0.4335
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.974E-03	0.0036
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.926E-02	0.1199
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.291E-04	0.0010
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.241E-02	0.0633
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.171E-02	0.0141
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.280E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr
 File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL-OUTSIDE-LA_FEB2011_100MREM-RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.668E-03	0.0021	4.293E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-03	0.0016
Cs-137	6.745E-02	0.0529	6.499E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.282E-05	0.0000
Np-237	6.828E-02	0.0536	2.193E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-03	0.0009
Pu-238	6.114E-06	0.0000	3.369E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.578E-03	0.0012
Pu-239	1.952E-05	0.0000	5.515E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.561E-03	0.0020
Pu-240	8.768E-06	0.0000	5.494E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.552E-03	0.0020
Tc-99	4.339E-12	0.0000	3.916E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.557E-12	0.0000
Th-228	6.944E-09	0.0000	2.968E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.771E-11	0.0000
Th-230	1.510E-02	0.0118	5.030E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.122E-03	0.0024
Th-232	9.850E-01	0.7729	9.483E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.293E-02	0.0494
U-234	2.780E-05	0.0000	4.668E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.330E-04	0.0006
U-235	4.749E-02	0.0373	4.505E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.141E-04	0.0006
U-238	1.004E-02	0.0079	4.047E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.043E-04	0.0006
Total	1.196E+00	0.9385	3.670E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.803E-02	0.0612

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.698E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.750E-02	0.0530
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.940E-02	0.0545
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.618E-03	0.0013
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.636E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.899E-12	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.982E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.827E-02	0.0143
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E+00	0.8223
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.654E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-02	0.0378
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-02	0.0084
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.456E-03	0.0020	3.950E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.828E-03	0.0015
Cs-137	2.081E-02	0.0169	2.005E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-05	0.0000
Np-237	6.281E-02	0.0509	2.017E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-03	0.0008
Pu-238	4.079E-06	0.0000	2.246E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.052E-03	0.0009
Pu-239	1.928E-05	0.0000	5.449E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.531E-03	0.0021
Pu-240	8.630E-06	0.0000	5.407E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-03	0.0020
Tc-99	2.567E-18	0.0000	2.317E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.696E-18	0.0000
Th-228	9.403E-17	0.0000	4.018E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.106E-19	0.0000
Th-230	2.945E-02	0.0239	5.040E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.148E-03	0.0034
Th-232	9.861E-01	0.7998	9.476E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.296E-02	0.0511
U-234	3.513E-05	0.0000	4.298E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.731E-04	0.0005
U-235	4.365E-02	0.0354	4.469E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.783E-04	0.0006
U-238	9.196E-03	0.0075	3.709E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.454E-04	0.0005
Total	1.154E+00	0.9364	3.483E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.805E-02	0.0633

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.323E-03	0.0035
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.082E-02	0.0169
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.384E-02	0.0518
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.078E-03	0.0009
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.604E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.574E-03	0.0021
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.265E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.454E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.365E-02	0.0273
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E+00	0.8509
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.125E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.433E-02	0.0360
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.845E-03	0.0080
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.266E-03	0.0010	2.029E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.390E-04	0.0008
Cs-137	1.705E-06	0.0000	1.643E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-09	0.0000
Np-237	3.221E-02	0.0260	1.035E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.215E-04	0.0004
Pu-238	2.167E-07	0.0000	8.759E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.112E-05	0.0000
Pu-239	1.752E-05	0.0000	4.947E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-03	0.0019
Pu-240	7.596E-06	0.0000	4.759E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.210E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.274E-01	0.1027	5.100E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.170E-02	0.0094
Th-232	9.717E-01	0.7829	9.339E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.204E-02	0.0500
U-234	2.412E-04	0.0002	2.264E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.561E-04	0.0003
U-235	2.252E-02	0.0181	4.317E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.821E-04	0.0004
U-238	4.568E-03	0.0037	1.845E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.210E-04	0.0003
Total	1.160E+00	0.9346	2.814E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.091E-02	0.0652

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.225E-03	0.0018
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.706E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.274E-02	0.0264
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.222E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-03	0.0019
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.265E-03	0.0018
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-01	0.1121
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E+00	0.8330
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.995E-04	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.301E-02	0.0185
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.891E-03	0.0039
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.241E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.527E-04	0.0004	8.825E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.084E-04	0.0003
Cs-137	1.330E-11	0.0000	1.281E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.442E-15	0.0000
Np-237	1.398E-02	0.0109	4.502E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-04	0.0002
Pu-238	1.919E-07	0.0000	1.561E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.880E-07	0.0000
Pu-239	1.553E-05	0.0000	4.383E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-03	0.0016
Pu-240	6.476E-06	0.0000	4.057E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.884E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.156E-01	0.1682	5.125E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-02	0.0144
Th-232	9.541E-01	0.7442	9.169E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.092E-02	0.0475
U-234	6.418E-04	0.0005	1.096E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.957E-04	0.0002
U-235	1.026E-02	0.0080	3.985E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-04	0.0003
U-238	1.906E-03	0.0015	7.709E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E-04	0.0001
Total	1.197E+00	0.9338	2.465E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.467E-02	0.0660

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.699E-04	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.331E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.421E-02	0.0111
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.955E-07	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.095E-03	0.0016
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.931E-03	0.0015
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.342E-01	0.1827
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E+00	0.7918
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.386E-04	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.062E-02	0.0083
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.282E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Am-241	Np-237+D	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Am-241	U-233	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
Am-241	Th-229+D	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Am-241	ΣDSR(j)		5.104E-03	5.096E-03	4.698E-03	4.323E-03	2.225E-03	9.699E-04
Cs-137+D	Cs-137+D	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Np-237+D	Np-237+D	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237+D	U-233	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
Np-237+D	Th-229+D	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Np-237+D	ΣDSR(j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	U-234	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
Pu-238	Th-230	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Pu-238	Ra-226+D	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Pu-238	Pb-210+D	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pu-238	ΣDSR(j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.222E-05	9.955E-07
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-239	U-235+D	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
Pu-239	Pa-231	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pu-239	Ac-227+D	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Pu-239	ΣDSR(j)		2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	U-236	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Pu-240	Th-232	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Pu-240	Ra-228+D	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Pu-240	Th-228+D	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Pu-240	ΣDSR(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	Ra-226+D	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Th-230	Pb-210+D	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Th-230	ΣDSR(j)		2.664E-03	2.974E-03	1.827E-02	3.365E-02	1.392E-01	2.342E-01

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	Ra-228+D	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-232	Th-228+D	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-232	∑DSR(j)		3.209E-02	9.926E-02	1.048E+00	1.049E+00	1.034E+00	1.015E+00
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	Th-230	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
U-234	Ra-226+D	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
U-234	Pb-210+D	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
U-234	∑DSR(j)		8.305E-04	8.291E-04	7.654E-04	7.125E-04	5.995E-04	8.386E-04
U-235+D	U-235+D	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235+D	Pa-231	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
U-235+D	Ac-227+D	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
U-235+D	∑DSR(j)		5.250E-02	5.241E-02	4.821E-02	4.433E-02	2.301E-02	1.062E-02
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238+D	U-238+D	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238+D	U-234	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-238+D	Th-230	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
U-238+D	Ra-226+D	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
U-238+D	Pb-210+D	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
U-238+D	∑DSR(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.041E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	1.959E+04	1.962E+04	2.129E+04	2.313E+04	4.494E+04	1.031E+05
Cs-137	4.570E+02	4.679E+02	1.482E+03	4.803E+03	5.860E+07	7.515E+12
Np-237	1.326E+03	1.328E+03	1.441E+03	1.566E+03	3.054E+03	7.035E+03
Pu-238	4.120E+04	4.154E+04	6.181E+04	9.273E+04	2.369E+06	1.005E+08
Pu-239	3.748E+04	3.749E+04	3.793E+04	3.840E+04	4.229E+04	4.773E+04
Pu-240	3.763E+04	3.764E+04	3.824E+04	3.885E+04	4.414E+04	5.178E+04
Tc-99	6.648E+06	8.856E+06	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	1.939E+02	2.786E+02	1.432E+10	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	3.753E+04	3.362E+04	5.473E+03	2.972E+03	7.186E+02	4.270E+02
Th-232	3.116E+03	1.008E+03	9.542E+01	9.532E+01	9.672E+01	9.851E+01
U-234	1.204E+05	1.206E+05	1.306E+05	1.404E+05	1.668E+05	1.192E+05
U-235	1.905E+03	1.908E+03	2.074E+03	2.256E+03	4.347E+03	9.416E+03
U-238	8.528E+03	8.542E+03	9.307E+03	1.016E+04	2.044E+04	4.901E+04

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 35.12 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	5.104E-03	1.959E+04	4.815E-03	2.077E+04
Cs-137	1.000E+00	0.000E+00	2.188E-01	4.570E+02	9.578E-02	1.044E+03
Np-237	1.000E+00	0.000E+00	7.544E-02	1.326E+03	7.115E-02	1.406E+03
Pu-238	1.000E+00	0.000E+00	2.427E-03	4.120E+04	1.825E-03	5.479E+04
Pu-239	1.000E+00	0.000E+00	2.668E-03	3.748E+04	2.646E-03	3.780E+04
Pu-240	1.000E+00	0.000E+00	2.657E-03	3.763E+04	2.628E-03	3.806E+04
Tc-99	1.000E+00	0.000E+00	1.504E-05	6.648E+06	6.348E-10	*1.697E+10
Th-228	1.000E+00	0.000E+00	5.157E-01	1.939E+02	1.533E-06	6.525E+07
Th-230	1.000E+00	1.000E+03	2.342E-01	4.270E+02	1.363E-02	7.338E+03
Th-232	1.000E+00	68.5 ± 0.1	1.050E+00	9.524E+01	1.033E+00	9.678E+01
U-234	1.000E+00	1.000E+03	8.386E-04	1.192E+05	7.835E-04	1.276E+05
U-235	1.000E+00	0.000E+00	5.250E-02	1.905E+03	4.943E-02	2.023E+03
U-238	1.000E+00	0.000E+00	1.173E-02	8.528E+03	1.103E-02	9.068E+03

*At specific activity limit

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	5.104E-03	5.096E-03	4.696E-03	4.321E-03	2.220E-03	9.653E-04
Np-237	Am-241	1.000E+00	1.221E-08	3.659E-08	1.135E-06	2.079E-06	5.313E-06	4.613E-06
Np-237	Np-237	1.000E+00	7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
Np-237	∑DOSE (j)		7.544E-02	7.532E-02	6.940E-02	6.384E-02	3.274E-02	1.421E-02
U-233	Am-241	1.000E+00	2.224E-16	1.555E-15	1.564E-12	5.690E-12	7.161E-11	1.225E-10
U-233	Np-237	1.000E+00	2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.766E-07	7.448E-07
U-233	∑DOSE (j)		2.060E-09	6.171E-09	1.911E-07	3.491E-07	8.767E-07	7.450E-07
Th-229	Am-241	1.000E+00	6.504E-19	9.746E-18	3.141E-13	2.320E-12	1.720E-10	7.432E-10
Th-229	Np-237	1.000E+00	8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.400E-06	7.946E-06
Th-229	∑DOSE (j)		8.034E-12	5.618E-11	5.796E-08	2.165E-07	3.401E-06	7.947E-06
Cs-137	Cs-137	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
Pu-238	Pu-238	1.840E-09	4.466E-12	4.430E-12	2.977E-12	1.984E-12	7.730E-14	1.338E-15
Pu-238	Pu-238	1.000E+00	2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
Pu-238	∑DOSE (j)		2.427E-03	2.407E-03	1.618E-03	1.078E-03	4.201E-05	7.271E-07
U-234	Pu-238	1.000E+00	1.174E-09	3.508E-09	9.317E-08	1.467E-07	1.478E-07	6.409E-08
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	U-238	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-234	∑DOSE (j)		8.305E-04	8.291E-04	7.611E-04	6.974E-04	3.465E-04	1.445E-04
Th-230	Pu-238	1.000E+00	1.065E-14	7.432E-14	6.938E-11	2.355E-10	2.114E-09	3.423E-09
Th-230	Th-230	1.000E+00	2.509E-03	2.509E-03	2.504E-03	2.498E-03	2.453E-03	2.398E-03
Th-230	U-234	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
Th-230	U-238	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
Th-230	∑DOSE (j)		2.510E-03	2.509E-03	2.505E-03	2.500E-03	2.460E-03	2.408E-03
Ra-226	Pu-238	1.000E+00	3.286E-16	4.918E-15	1.488E-10	1.035E-09	5.444E-08	1.912E-07
Ra-226	Th-230	1.000E+00	1.548E-04	4.642E-04	1.536E-02	3.003E-02	1.302E-01	2.204E-01
Ra-226	U-234	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
Ra-226	U-238	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
Ra-226	∑DOSE (j)		1.548E-04	4.642E-04	1.536E-02	3.004E-02	1.304E-01	2.210E-01
Pb-210	Pu-238	1.000E+00	1.093E-19	3.362E-18	2.405E-12	2.669E-11	2.527E-09	9.638E-09
Pb-210	Th-230	1.000E+00	8.552E-08	5.932E-07	4.086E-04	1.118E-03	6.528E-03	1.142E-02
Pb-210	U-234	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
Pb-210	U-238	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
Pb-210	∑DOSE (j)		8.552E-08	5.932E-07	4.087E-04	1.119E-03	6.539E-03	1.146E-02
Pu-239	Pu-239	1.000E+00	2.668E-03	2.668E-03	2.636E-03	2.604E-03	2.364E-03	2.095E-03
U-235	Pu-239	1.000E+00	2.586E-11	7.751E-11	2.486E-09	4.710E-09	1.611E-08	2.099E-08
U-235	U-235	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235	∑DOSE (j)		5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	7.487E-17	5.238E-16	5.522E-13	2.108E-12	3.944E-11	1.136E-10
Pa-231	U-235	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Pa-231	ΣDOSE(j)		2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
Ac-227	Pu-239	1.000E+00	4.210E-18	6.268E-17	1.478E-12	8.491E-12	2.503E-10	7.669E-10
Ac-227	U-235	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Ac-227	ΣDOSE(j)		1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
Pu-240	Pu-240	4.950E-08	1.315E-10	1.315E-10	1.295E-10	1.274E-10	1.121E-10	9.560E-11
Pu-240	Pu-240	1.000E+00	2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
Pu-240	ΣDOSE(j)		2.657E-03	2.656E-03	2.615E-03	2.574E-03	2.265E-03	1.931E-03
U-236	Pu-240	1.000E+00	1.146E-11	3.436E-11	1.100E-09	2.080E-09	6.990E-09	8.871E-09
Th-232	Pu-240	1.000E+00	6.805E-22	4.761E-21	5.029E-18	1.924E-17	3.663E-16	1.082E-15
Th-232	Th-232	1.000E+00	2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Th-232	ΣDOSE(j)		2.797E-03	2.797E-03	2.792E-03	2.787E-03	2.746E-03	2.697E-03
Ra-228	Pu-240	1.000E+00	3.129E-21	4.575E-20	5.715E-16	2.559E-15	5.556E-14	1.668E-13
Ra-228	Th-232	1.000E+00	2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Ra-228	ΣDOSE(j)		2.532E-02	7.207E-02	4.346E-01	4.348E-01	4.285E-01	4.207E-01
Th-228	Pu-240	1.000E+00	3.018E-22	8.638E-21	7.102E-16	3.398E-15	7.739E-14	2.336E-13
Th-228	Th-228	1.000E+00	5.157E-01	3.590E-01	6.982E-09	9.454E-17	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	3.975E-03	2.438E-02	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Th-228	ΣDOSE(j)		5.197E-01	3.833E-01	6.106E-01	6.115E-01	6.026E-01	5.917E-01
Tc-99	Tc-99	1.000E+00	1.504E-05	1.129E-05	8.899E-12	5.265E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238	U-238	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238	ΣDOSE(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : RESRAD Parameters for Recreational User Outside Limited Area 100 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	∑S(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	∑S(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	∑S(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	∑S(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	∑S(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	∑S(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	∑S(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 32.83 seconds

ATTACHMENT 4

SUMMARY REPORT FOR WILDLIFE WORKER

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Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.104E+00	2.035E+00	DCF2 (1)
B-1	Am-241	3.552E-01	3.552E-01	DCF2 (2)
B-1	Cs-137+D	1.443E-04	1.443E-04	DCF2 (3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2 (4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2 (5)
B-1	Pb-210+D	3.697E-02	2.072E-02	DCF2 (6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2 (7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2 (9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2 (10)
B-1	Ra-226+D	3.526E-02	3.515E-02	DCF2 (12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2 (14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2 (15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2 (17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2 (18)
B-1	U-233	3.552E-02	3.552E-02	DCF2 (19)
B-1	U-234	3.478E-02	3.478E-02	DCF2 (20)
B-1	U-235+D	3.145E-02	3.145E-02	DCF2 (21)
B-1	U-236	3.219E-02	3.219E-02	DCF2 (22)
B-1	U-238	2.960E-02	2.960E-02	DCF2 (23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.627E-03	2.627E-03	DCF3 (5)
D-1	Pb-210+D	6.998E-03	2.553E-03	DCF3 (6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3 (7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3 (9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3 (10)
D-1	Ra-226+D	1.037E-03	1.036E-03	DCF3 (12)
D-1	Ra-228+D	2.555E-03	2.553E-03	DCF3 (13)
D-1	Tc-99	2.368E-06	2.368E-06	DCF3 (14)

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.301E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.269E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.887E-04	1.887E-04	DCF3(19)
D-1	U-234	1.813E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.752E-04	1.739E-04	DCF3(21)
D-1	U-236	1.739E-04	1.739E-04	DCF3(22)
D-1	U-238	1.665E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.791E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)
D-5				

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.610E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.700E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV (1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV (3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE (1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE (2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE (3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV (1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV (2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV (3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY (1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY (2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY (3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET (1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET (2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET (3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_1MREM-WW-QC.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Contaminated Zone Dimensions Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters Thickness: 0.15 meters Cover Depth: 0.00 meters	Am-241 1.000E+00 Cs-137 1.000E+00 Np-237 1.000E+00 Pu-238 1.000E+00 Pu-239 1.000E+00 Pu-240 1.000E+00 Tc-99 1.000E+00 Th-228 1.000E+00 Th-230 1.000E+00 Th-232 1.000E+00 U-234 1.000E+00 U-235 1.000E+00 U-238 1.000E+00
--	--

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.950E+00	1.739E+00	2.597E+00	2.507E+00	2.518E+00	2.599E+00
M(t):	1.950E+00	1.739E+00	2.597E+00	2.507E+00	2.518E+00	2.599E+00

Maximum TDOSE(t): 2.625E+00 mrem/yr at t = 34.61 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.461E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.816E-03	0.0022	1.456E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.331E-03	0.0016
Cs-137	2.059E-01	0.0784	2.746E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.307E-04	0.0000
Np-237	1.489E-01	0.0567	7.582E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.401E-03	0.0009
Pu-238	1.472E-05	0.0000	1.330E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.972E-03	0.0015
Pu-239	4.162E-05	0.0000	1.913E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.691E-03	0.0022
Pu-240	1.872E-05	0.0000	1.908E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.676E-03	0.0022
Tc-99	7.621E-10	0.0000	8.888E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.248E-10	0.0000
Th-228	3.903E-06	0.0000	2.107E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.879E-09	0.0000
Th-230	2.248E-02	0.0086	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.165E-03	0.0020
Th-232	2.061E+00	0.7850	2.704E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.406E-02	0.0092
U-234	5.686E-05	0.0000	1.426E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.059E-03	0.0004
U-235	1.036E-01	0.0395	1.328E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.042E-03	0.0004
U-238	2.191E-02	0.0083	1.211E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.045E-03	0.0004
Total	2.569E+00	0.9788	1.207E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.457E-02	0.0208

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.461E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.029E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.060E-01	0.0785
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-01	0.0576
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.120E-03	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.924E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.885E-03	0.0022
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-09	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.913E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.781E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.085E+00	0.7943
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.130E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-01	0.0399
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-02	0.0087
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.625E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_1MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.160E-03	0.0032	1.542E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.588E-03	0.0024
Cs-137	4.647E-01	0.2383	6.197E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.950E-04	0.0002
Np-237	1.577E-01	0.0809	8.033E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.543E-03	0.0013
Pu-238	1.948E-05	0.0000	1.761E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.259E-03	0.0027
Pu-239	4.197E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Tc-99	1.558E-05	0.0000	1.817E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.277E-05	0.0000
Th-228	1.090E+00	0.5589	5.883E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.759E-03	0.0014
Th-230	4.966E-04	0.0003	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.823E-03	0.0025
Th-232	5.523E-02	0.0283	1.788E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.220E-03	0.0032
U-234	5.667E-05	0.0000	1.510E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.124E-03	0.0006
U-235	1.099E-01	0.0564	1.366E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.086E-03	0.0006
U-238	2.328E-02	0.0119	1.286E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-03	0.0006
Total	1.908E+00	0.9782	1.237E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.130E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-02	0.0056
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.650E-01	0.2384
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.603E-01	0.0822
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.455E-03	0.0028
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.974E-03	0.0031
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.951E-03	0.0031
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.838E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E+00	0.5603
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.480E-03	0.0028
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.163E-02	0.0316
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.196E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-01	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.440E-02	0.0125
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.149E-03	0.0035	1.540E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0026
Cs-137	4.539E-01	0.2611	6.053E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.881E-04	0.0002
Np-237	1.575E-01	0.0906	8.020E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.539E-03	0.0015
Pu-238	1.932E-05	0.0000	1.747E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.217E-03	0.0030
Pu-239	4.196E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.738E-03	0.0033
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.737E-03	0.0033
Tc-99	1.170E-05	0.0000	1.364E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.589E-06	0.0000
Th-228	7.586E-01	0.4364	4.095E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.920E-03	0.0011
Th-230	1.139E-03	0.0007	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.826E-03	0.0028
Th-232	1.847E-01	0.1062	1.839E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.024E-03	0.0046
U-234	5.658E-05	0.0000	1.508E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-03	0.0006
U-235	1.097E-01	0.0631	1.364E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-03	0.0006
U-238	2.324E-02	0.0134	1.284E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-03	0.0006
Total	1.695E+00	0.9750	1.222E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.219E-02	0.0243

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.088E-02	0.0063
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.542E-01	0.2612
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-01	0.0921
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.411E-03	0.0031
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.972E-03	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.949E-03	0.0034
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.130E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.606E-01	0.4375
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.126E-03	0.0035
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.929E-01	0.1110
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.194E-03	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-01	0.0638
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.436E-02	0.0140
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.739E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_1MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.670E-03	0.0022	1.419E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.221E-03	0.0016
Cs-137	1.433E-01	0.0552	1.912E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.099E-05	0.0000
Np-237	1.451E-01	0.0559	7.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.340E-03	0.0009
Pu-238	1.299E-05	0.0000	1.174E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.506E-03	0.0013
Pu-239	4.147E-05	0.0000	1.906E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.670E-03	0.0022
Pu-240	1.863E-05	0.0000	1.899E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.648E-03	0.0022
Tc-99	9.220E-12	0.0000	1.075E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.558E-12	0.0000
Th-228	1.476E-08	0.0000	7.966E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-11	0.0000
Th-230	3.209E-02	0.0124	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.410E-03	0.0021
Th-232	2.093E+00	0.8059	2.718E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.430E-02	0.0094
U-234	5.908E-05	0.0000	1.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.032E-03	0.0004
U-235	1.009E-01	0.0389	1.321E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-03	0.0004
U-238	2.133E-02	0.0082	1.179E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.017E-03	0.0004
Total	2.542E+00	0.9787	1.185E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.426E-02	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.434E-01	0.0552
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.475E-01	0.0568
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.636E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.902E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.856E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-11	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.480E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.766E-02	0.0145
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.118E+00	0.8154
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-01	0.0393
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.236E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.597E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Table with 14 columns: Radio-Nuclide, Ground (mrem/yr, fract.), Inhalation (mrem/yr, fract.), Radon (mrem/yr, fract.), Plant (mrem/yr, fract.), Meat (mrem/yr, fract.), Milk (mrem/yr, fract.), Soil (mrem/yr, fract.). Rows include Am-241, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, U-238, and a Total row.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Table with 14 columns: Radio-Nuclide, Water (mrem/yr, fract.), Fish (mrem/yr, fract.), Radon (mrem/yr, fract.), Plant (mrem/yr, fract.), Meat (mrem/yr, fract.), Milk (mrem/yr, fract.), All Pathways* (mrem/yr, fract.). Rows include Am-241, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, U-238, and a Total row.

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.690E-03	0.0011	6.707E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.995E-03	0.0008
Cs-137	3.624E-06	0.0000	4.833E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-09	0.0000
Np-237	6.845E-02	0.0272	3.489E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
Pu-238	4.606E-07	0.0000	3.052E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.124E-05	0.0000
Pu-239	3.722E-05	0.0000	1.709E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.085E-03	0.0020
Pu-240	1.614E-05	0.0000	1.645E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.893E-03	0.0019
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.707E-01	0.1075	1.627E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E-02	0.0053
Th-232	2.065E+00	0.8201	2.677E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.395E-02	0.0095
U-234	5.125E-04	0.0002	6.775E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.972E-04	0.0002
U-235	4.785E-02	0.0190	1.295E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.355E-04	0.0003
U-238	9.708E-03	0.0039	5.374E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.637E-04	0.0002
Total	2.465E+00	0.9790	8.959E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.208E-02	0.0207

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-03	0.0019
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.959E-02	0.0276
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.475E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.294E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.073E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.842E-01	0.1129
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.089E+00	0.8297
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.016E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.860E-02	0.0193
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.018E-02	0.0040
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.518E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.174E-03	0.0005	2.917E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.678E-04	0.0003
Cs-137	2.826E-11	0.0000	3.769E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.794E-14	0.0000
Np-237	2.971E-02	0.0114	1.517E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.808E-04	0.0002
Pu-238	4.078E-07	0.0000	5.417E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.682E-06	0.0000
Pu-239	3.300E-05	0.0000	1.515E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.506E-03	0.0017
Pu-240	1.376E-05	0.0000	1.402E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.171E-03	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.582E-01	0.1763	1.631E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E-02	0.0075
Th-232	2.027E+00	0.7802	2.628E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.351E-02	0.0090
U-234	1.364E-03	0.0005	3.310E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.581E-04	0.0001
U-235	2.181E-02	0.0084	1.208E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.652E-04	0.0002
U-238	4.050E-03	0.0016	2.246E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-04	0.0001
Total	2.544E+00	0.9789	7.796E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.406E-02	0.0208

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.071E-03	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.828E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.021E-02	0.0116
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.144E-06	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.691E-03	0.0018
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.325E-03	0.0017
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.779E-01	0.1839
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E+00	0.7893
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.239E-02	0.0086
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.245E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.599E+00	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
 Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Am-241	Np-237+D	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Am-241	U-233	1.000E+00	3.273E-16	2.288E-15	2.301E-12	8.374E-12	1.054E-10	1.803E-10
Am-241	Th-229+D	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.524E-09
Am-241	ΣDSR(j)		1.090E-02	1.088E-02	1.003E-02	9.234E-03	4.752E-03	2.071E-03
Cs-137+D	Cs-137+D	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Np-237+D	Np-237+D	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237+D	U-233	1.000E+00	3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
Np-237+D	Th-229+D	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Np-237+D	ΣDSR(j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.021E-02
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	U-234	1.000E+00	1.691E-09	5.050E-09	1.341E-07	2.113E-07	2.127E-07	9.227E-08
Pu-238	Th-230	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Pu-238	Ra-226+D	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.159E-09	1.136E-07	3.988E-07
Pu-238	Pb-210+D	1.000E+00	1.270E-19	3.909E-18	2.796E-12	3.103E-11	2.939E-09	1.121E-08
Pu-238	ΣDSR(j)		5.455E-03	5.411E-03	3.636E-03	2.424E-03	9.475E-05	2.144E-06
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
Pu-239	U-235+D	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
Pu-239	Pa-231	1.000E+00	1.521E-16	1.064E-15	1.122E-12	4.284E-12	8.014E-11	2.309E-10
Pu-239	Ac-227+D	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Pu-239	ΣDSR(j)		5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.294E-03	4.691E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	U-236	1.000E+00	1.660E-11	4.977E-11	1.593E-09	3.013E-09	1.013E-08	1.285E-08
Pu-240	Th-232	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Pu-240	Ra-228+D	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Pu-240	Th-228+D	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Pu-240	ΣDSR(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Tc-99	Tc-99	1.000E+00	2.838E-05	2.130E-05	1.679E-11	9.933E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	Ra-226+D	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Th-230	Pb-210+D	1.000E+00	9.944E-08	6.897E-07	4.751E-04	1.300E-03	7.590E-03	1.328E-02
Th-230	ΣDSR(j)		5.480E-03	6.126E-03	3.766E-02	6.907E-02	2.842E-01	4.779E-01

Dose/Source Ratios Summed Over All Pathways
 Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	Ra-228+D	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-232	Th-228+D	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-232	∑DSR(j)		6.163E-02	1.929E-01	2.118E+00	2.120E+00	2.089E+00	2.051E+00
U-234	U-234	1.000E+00	1.196E-03	1.194E-03	1.095E-03	1.004E-03	4.980E-04	2.074E-04
U-234	Th-230	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
U-234	Ra-226+D	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.901E-04	1.358E-03
U-234	Pb-210+D	1.000E+00	2.241E-13	3.337E-12	7.887E-08	4.531E-07	1.304E-05	3.847E-05
U-234	∑DSR(j)		1.196E-03	1.194E-03	1.105E-03	1.035E-03	1.016E-03	1.625E-03
U-235+D	U-235+D	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235+D	Pa-231	1.000E+00	4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
U-235+D	Ac-227+D	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
U-235+D	∑DSR(j)		1.110E-01	1.108E-01	1.020E-01	9.374E-02	4.860E-02	2.239E-02
U-238	U-238	5.400E-05	5.716E-08	5.706E-08	5.237E-08	4.799E-08	2.384E-08	9.942E-09
U-238+D	U-238+D	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03
U-238+D	U-234	9.999E-01	1.694E-09	5.075E-09	1.568E-07	2.860E-07	7.070E-07	5.890E-07
U-238+D	Th-230	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
U-238+D	Ra-226+D	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
U-238+D	Pb-210+D	9.999E-01	1.272E-19	3.918E-18	2.985E-12	3.536E-11	5.203E-09	2.800E-08
U-238+D	∑DSR(j)		2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.245E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t=	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241		9.173E+01	9.188E+01	9.967E+01	1.083E+02	2.104E+02	4.828E+02
Cs-137		2.151E+00	2.202E+00	6.972E+00	2.260E+01	2.758E+05	3.536E+10
Np-237		6.237E+00	6.247E+00	6.780E+00	7.370E+00	1.437E+01	3.310E+01
Pu-238		1.833E+02	1.848E+02	2.750E+02	4.126E+02	1.055E+04	4.665E+05
Pu-239		1.674E+02	1.674E+02	1.694E+02	1.715E+02	1.889E+02	2.132E+02
Pu-240		1.681E+02	1.681E+02	1.708E+02	1.735E+02	1.971E+02	2.312E+02
Tc-99		3.524E+04	4.695E+04	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228		9.151E-01	1.315E+00	6.759E+07	*8.195E+14	*8.195E+14	*8.195E+14
Th-230		1.825E+02	1.632E+02	2.655E+01	1.448E+01	3.519E+00	2.093E+00
Th-232		1.623E+01	5.184E+00	4.722E-01	4.717E-01	4.787E-01	4.875E-01
U-234		8.363E+02	8.377E+02	9.051E+02	9.658E+02	9.838E+02	6.153E+02
U-235		9.006E+00	9.021E+00	9.809E+00	1.067E+01	2.058E+01	4.467E+01
U-238		4.098E+01	4.106E+01	4.473E+01	4.882E+01	9.826E+01	2.355E+02

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 34.61 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	1.090E-02	9.173E+01	1.029E-02	9.716E+01
Cs-137	1.000E+00	0.000E+00	4.650E-01	2.151E+00	2.060E-01	4.854E+00
Np-237	1.000E+00	0.000E+00	1.603E-01	6.237E+00	1.513E-01	6.608E+00
Pu-238	1.000E+00	0.000E+00	5.455E-03	1.833E+02	4.120E-03	2.427E+02
Pu-239	1.000E+00	0.000E+00	5.974E-03	1.674E+02	5.924E-03	1.688E+02
Pu-240	1.000E+00	0.000E+00	5.951E-03	1.681E+02	5.885E-03	1.699E+02
Tc-99	1.000E+00	0.000E+00	2.838E-05	3.524E+04	1.388E-09	7.206E+08
Th-228	1.000E+00	0.000E+00	1.093E+00	9.151E-01	3.913E-06	2.556E+05
Th-230	1.000E+00	1.000E+03	4.779E-01	2.093E+00	2.781E-02	3.596E+01
Th-232	1.000E+00	68.6 ± 0.1	2.122E+00	4.713E-01	2.085E+00	4.796E-01
U-234	1.000E+00	1.000E+03	1.625E-03	6.153E+02	1.130E-03	8.846E+02
U-235	1.000E+00	0.000E+00	1.110E-01	9.006E+00	1.046E-01	9.556E+00
U-238	1.000E+00	0.000E+00	2.440E-02	4.098E+01	2.297E-02	4.354E+01

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Np-237	Am-241	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Np-237	Np-237	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237	ΣDOSE (j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.020E-02
U-233	Am-241	1.000E+00	3.273E-16	2.288E-15	2.301E-12	8.374E-12	1.054E-10	1.803E-10
U-233	Np-237	1.000E+00	3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
U-233	ΣDOSE (j)		3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
Th-229	Am-241	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.524E-09
Th-229	Np-237	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Th-229	ΣDOSE (j)		1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Cs-137	Cs-137	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	ΣDOSE (j)		5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
U-234	Pu-238	1.000E+00	1.691E-09	5.050E-09	1.341E-07	2.113E-07	2.127E-07	9.227E-08
U-234	U-234	1.000E+00	1.196E-03	1.194E-03	1.095E-03	1.004E-03	4.980E-04	2.074E-04
U-234	U-238	9.999E-01	1.694E-09	5.075E-09	1.568E-07	2.860E-07	7.070E-07	5.890E-07
U-234	ΣDOSE (j)		1.196E-03	1.194E-03	1.096E-03	1.004E-03	4.989E-04	2.081E-04
Th-230	Pu-238	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	U-234	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
Th-230	U-238	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
Th-230	ΣDOSE (j)		5.157E-03	5.157E-03	5.148E-03	5.138E-03	5.056E-03	4.948E-03
Ra-226	Pu-238	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.159E-09	1.136E-07	3.988E-07
Ra-226	Th-230	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Ra-226	U-234	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.901E-04	1.358E-03
Ra-226	U-238	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
Ra-226	ΣDOSE (j)		3.229E-04	9.683E-04	3.204E-02	6.267E-02	2.720E-01	4.610E-01
Pb-210	Pu-238	1.000E+00	1.270E-19	3.909E-18	2.796E-12	3.103E-11	2.939E-09	1.121E-08
Pb-210	Th-230	1.000E+00	9.944E-08	6.897E-07	4.751E-04	1.300E-03	7.590E-03	1.328E-02
Pb-210	U-234	1.000E+00	2.241E-13	3.337E-12	7.887E-08	4.531E-07	1.304E-05	3.847E-05
Pb-210	U-238	9.999E-01	1.272E-19	3.918E-18	2.985E-12	3.536E-11	5.203E-09	2.800E-08
Pb-210	ΣDOSE (j)		9.944E-08	6.897E-07	4.752E-04	1.301E-03	7.603E-03	1.332E-02
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
U-235	Pu-239	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
U-235	U-235	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235	ΣDOSE (j)		1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	1.521E-16	1.064E-15	1.122E-12	4.284E-12	8.014E-11	2.309E-10
Pa-231	U-235	1.000E+00	4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
Pa-231	ΣDOSE(j)		4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
Ac-227	Pu-239	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Ac-227	U-235	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Ac-227	ΣDOSE(j)		3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	ΣDOSE(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
U-236	Pu-240	1.000E+00	1.660E-11	4.977E-11	1.593E-09	3.013E-09	1.013E-08	1.285E-08
Th-232	Pu-240	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	ΣDOSE(j)		5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Ra-228	Pu-240	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Ra-228	Th-232	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Ra-228	ΣDOSE(j)		4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-228	Pu-240	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Th-228	Th-228	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-228	ΣDOSE(j)		1.101E+00	8.122E-01	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Tc-99	Tc-99	1.000E+00	2.838E-05	2.130E-05	1.679E-11	9.933E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.716E-08	5.706E-08	5.237E-08	4.799E-08	2.384E-08	9.942E-09
U-238	U-238	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03
U-238	ΣDOSE(j)		2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 1 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	∑S(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	∑S(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	∑S(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	∑S(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	∑S(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	∑S(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	∑S(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 129.26 seconds

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Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.104E+00	2.035E+00	DCF2 (1)
B-1	Am-241	3.552E-01	3.552E-01	DCF2 (2)
B-1	Cs-137+D	1.443E-04	1.443E-04	DCF2 (3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2 (4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2 (5)
B-1	Pb-210+D	3.697E-02	2.072E-02	DCF2 (6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2 (7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2 (9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2 (10)
B-1	Ra-226+D	3.526E-02	3.515E-02	DCF2 (12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2 (14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2 (15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2 (17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2 (18)
B-1	U-233	3.552E-02	3.552E-02	DCF2 (19)
B-1	U-234	3.478E-02	3.478E-02	DCF2 (20)
B-1	U-235+D	3.145E-02	3.145E-02	DCF2 (21)
B-1	U-236	3.219E-02	3.219E-02	DCF2 (22)
B-1	U-238	2.960E-02	2.960E-02	DCF2 (23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.627E-03	2.627E-03	DCF3 (5)
D-1	Pb-210+D	6.998E-03	2.553E-03	DCF3 (6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3 (7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3 (9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3 (10)
D-1	Ra-226+D	1.037E-03	1.036E-03	DCF3 (12)
D-1	Ra-228+D	2.555E-03	2.553E-03	DCF3 (13)
D-1	Tc-99	2.368E-06	2.368E-06	DCF3 (14)

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.301E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.269E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.887E-04	1.887E-04	DCF3(19)
D-1	U-234	1.813E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.752E-04	1.739E-04	DCF3(21)
D-1	U-236	1.739E-04	1.739E-04	DCF3(22)
D-1	U-238	1.665E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.791E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.610E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.700E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV (1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV (3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE (1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE (2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE (3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV (1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV (2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV (3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY (1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY (2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY (3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET (1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET (2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET (3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters
 Thickness: 0.15 meters
 Cover Depth: 0.00 meters

Am-241 1.000E+00
 Cs-137 1.000E+00
 Np-237 1.000E+00
 Pu-238 1.000E+00
 Pu-239 1.000E+00
 Pu-240 1.000E+00
 Tc-99 1.000E+00
 Th-228 1.000E+00
 Th-230 1.000E+00
 Th-232 1.000E+00
 U-234 1.000E+00
 U-235 1.000E+00
 U-238 1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.950E+00	1.739E+00	2.597E+00	2.507E+00	2.518E+00	2.599E+00
M(t):	1.300E-01	1.159E-01	1.731E-01	1.672E-01	1.679E-01	1.732E-01

Maximum TDOSE(t): 2.625E+00 mrem/yr at t = 34.61 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.461E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.816E-03	0.0022	1.456E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.331E-03	0.0016
Cs-137	2.059E-01	0.0784	2.746E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.307E-04	0.0000
Np-237	1.489E-01	0.0567	7.582E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.401E-03	0.0009
Pu-238	1.472E-05	0.0000	1.330E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.972E-03	0.0015
Pu-239	4.162E-05	0.0000	1.913E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.691E-03	0.0022
Pu-240	1.872E-05	0.0000	1.908E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.676E-03	0.0022
Tc-99	7.621E-10	0.0000	8.888E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.248E-10	0.0000
Th-228	3.903E-06	0.0000	2.107E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.879E-09	0.0000
Th-230	2.248E-02	0.0086	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.165E-03	0.0020
Th-232	2.061E+00	0.7850	2.704E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.406E-02	0.0092
U-234	5.686E-05	0.0000	1.426E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.059E-03	0.0004
U-235	1.036E-01	0.0395	1.328E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.042E-03	0.0004
U-238	2.191E-02	0.0083	1.211E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.045E-03	0.0004
Total	2.569E+00	0.9788	1.207E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.457E-02	0.0208

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.461E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.029E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.060E-01	0.0785
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-01	0.0576
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.120E-03	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.924E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.885E-03	0.0022
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-09	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.913E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.781E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.085E+00	0.7943
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.130E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-01	0.0399
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-02	0.0087
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.625E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.160E-03	0.0032	1.542E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.588E-03	0.0024
Cs-137	4.647E-01	0.2383	6.197E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.950E-04	0.0002
Np-237	1.577E-01	0.0809	8.033E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.543E-03	0.0013
Pu-238	1.948E-05	0.0000	1.761E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.259E-03	0.0027
Pu-239	4.197E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Tc-99	1.558E-05	0.0000	1.817E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.277E-05	0.0000
Th-228	1.090E+00	0.5589	5.883E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.759E-03	0.0014
Th-230	4.966E-04	0.0003	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.823E-03	0.0025
Th-232	5.523E-02	0.0283	1.788E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.220E-03	0.0032
U-234	5.667E-05	0.0000	1.510E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.124E-03	0.0006
U-235	1.099E-01	0.0564	1.366E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.086E-03	0.0006
U-238	2.328E-02	0.0119	1.286E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-03	0.0006
Total	1.908E+00	0.9782	1.237E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.130E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-02	0.0056
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.650E-01	0.2384
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.603E-01	0.0822
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.455E-03	0.0028
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.974E-03	0.0031
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.951E-03	0.0031
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.838E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E+00	0.5603
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.480E-03	0.0028
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.163E-02	0.0316
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.196E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-01	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.440E-02	0.0125
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Table with 14 columns: Radionuclide, Ground (mrem/yr, fract.), Inhalation (mrem/yr, fract.), Radon (mrem/yr, fract.), Plant (mrem/yr, fract.), Meat (mrem/yr, fract.), Milk (mrem/yr, fract.), Soil (mrem/yr, fract.). Rows include Am-241, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, U-238, and Total.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Table with 14 columns: Radionuclide, Water (mrem/yr, fract.), Fish (mrem/yr, fract.), Radon (mrem/yr, fract.), Plant (mrem/yr, fract.), Meat (mrem/yr, fract.), Milk (mrem/yr, fract.), All Pathways* (mrem/yr, fract.). Rows include Am-241, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, U-238, and Total.

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.670E-03	0.0022	1.419E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.221E-03	0.0016
Cs-137	1.433E-01	0.0552	1.912E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.099E-05	0.0000
Np-237	1.451E-01	0.0559	7.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.340E-03	0.0009
Pu-238	1.299E-05	0.0000	1.174E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.506E-03	0.0013
Pu-239	4.147E-05	0.0000	1.906E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.670E-03	0.0022
Pu-240	1.863E-05	0.0000	1.899E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.648E-03	0.0022
Tc-99	9.220E-12	0.0000	1.075E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.558E-12	0.0000
Th-228	1.476E-08	0.0000	7.966E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-11	0.0000
Th-230	3.209E-02	0.0124	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.410E-03	0.0021
Th-232	2.093E+00	0.8059	2.718E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.430E-02	0.0094
U-234	5.908E-05	0.0000	1.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.032E-03	0.0004
U-235	1.009E-01	0.0389	1.321E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-03	0.0004
U-238	2.133E-02	0.0082	1.179E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.017E-03	0.0004
Total	2.542E+00	0.9787	1.185E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.426E-02	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.434E-01	0.0552
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.475E-01	0.0568
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.636E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.902E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.856E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-11	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.480E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.766E-02	0.0145
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.118E+00	0.8154
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-01	0.0393
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.236E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.597E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.219E-03	0.0021	1.306E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.884E-03	0.0015
Cs-137	4.422E-02	0.0176	5.897E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.807E-05	0.0000
Np-237	1.335E-01	0.0532	6.799E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-03	0.0009
Pu-238	8.667E-06	0.0000	7.826E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.337E-03	0.0009
Pu-239	4.098E-05	0.0000	1.883E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.602E-03	0.0022
Pu-240	1.834E-05	0.0000	1.869E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.559E-03	0.0022
Tc-99	5.455E-18	0.0000	6.361E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.472E-18	0.0000
Th-228	1.998E-16	0.0000	1.079E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.058E-19	0.0000
Th-230	6.258E-02	0.0250	1.612E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.333E-03	0.0025
Th-232	2.095E+00	0.8357	2.716E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.430E-02	0.0097
U-234	7.466E-05	0.0000	1.281E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.479E-04	0.0004
U-235	9.275E-02	0.0370	1.315E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.810E-04	0.0004
U-238	1.954E-02	0.0078	1.080E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.324E-04	0.0004
Total	2.453E+00	0.9784	1.122E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.306E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.234E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.424E-02	0.0176
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.357E-01	0.0541
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.424E-03	0.0010
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.831E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.764E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.933E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.003E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.907E-02	0.0275
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.120E+00	0.8455
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.035E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.374E-02	0.0374
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.048E-02	0.0082
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.507E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Table with 14 columns: Radio-Nuclide, Ground (mrem/yr, fract.), Inhalation (mrem/yr, fract.), Radon (mrem/yr, fract.), Plant (mrem/yr, fract.), Meat (mrem/yr, fract.), Milk (mrem/yr, fract.), Soil (mrem/yr, fract.). Rows include Am-241, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, U-238, and Total.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Table with 14 columns: Radio-Nuclide, Water (mrem/yr, fract.), Fish (mrem/yr, fract.), Radon (mrem/yr, fract.), Plant (mrem/yr, fract.), Meat (mrem/yr, fract.), Milk (mrem/yr, fract.), All Pathways* (mrem/yr, fract.). Rows include Am-241, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Tc-99, Th-228, Th-230, Th-232, U-234, U-235, U-238, and Total.

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr
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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.174E-03	0.0005	2.917E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.678E-04	0.0003
Cs-137	2.826E-11	0.0000	3.769E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.794E-14	0.0000
Np-237	2.971E-02	0.0114	1.517E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.808E-04	0.0002
Pu-238	4.078E-07	0.0000	5.417E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.682E-06	0.0000
Pu-239	3.300E-05	0.0000	1.515E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.506E-03	0.0017
Pu-240	1.376E-05	0.0000	1.402E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.171E-03	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.582E-01	0.1763	1.631E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E-02	0.0075
Th-232	2.027E+00	0.7802	2.628E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.351E-02	0.0090
U-234	1.364E-03	0.0005	3.310E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.581E-04	0.0001
U-235	2.181E-02	0.0084	1.208E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.652E-04	0.0002
U-238	4.050E-03	0.0016	2.246E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-04	0.0001
Total	2.544E+00	0.9789	7.796E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.406E-02	0.0208

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.071E-03	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.828E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.021E-02	0.0116
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.144E-06	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.691E-03	0.0018
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.325E-03	0.0017
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.779E-01	0.1839
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E+00	0.7893
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.239E-02	0.0086
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.245E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.599E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Am-241	Np-237+D	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Am-241	U-233	1.000E+00	3.273E-16	2.288E-15	2.301E-12	8.374E-12	1.054E-10	1.803E-10
Am-241	Th-229+D	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.524E-09
Am-241	ΣDSR(j)		1.090E-02	1.088E-02	1.003E-02	9.234E-03	4.752E-03	2.071E-03
Cs-137+D	Cs-137+D	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Np-237+D	Np-237+D	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237+D	U-233	1.000E+00	3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
Np-237+D	Th-229+D	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Np-237+D	ΣDSR(j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.021E-02
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	U-234	1.000E+00	1.691E-09	5.050E-09	1.341E-07	2.113E-07	2.127E-07	9.227E-08
Pu-238	Th-230	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Pu-238	Ra-226+D	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.159E-09	1.136E-07	3.988E-07
Pu-238	Pb-210+D	1.000E+00	1.270E-19	3.909E-18	2.796E-12	3.103E-11	2.939E-09	1.121E-08
Pu-238	ΣDSR(j)		5.455E-03	5.411E-03	3.636E-03	2.424E-03	9.475E-05	2.144E-06
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
Pu-239	U-235+D	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
Pu-239	Pa-231	1.000E+00	1.521E-16	1.064E-15	1.122E-12	4.284E-12	8.014E-11	2.309E-10
Pu-239	Ac-227+D	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Pu-239	ΣDSR(j)		5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.294E-03	4.691E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	U-236	1.000E+00	1.660E-11	4.977E-11	1.593E-09	3.013E-09	1.013E-08	1.285E-08
Pu-240	Th-232	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Pu-240	Ra-228+D	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Pu-240	Th-228+D	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Pu-240	ΣDSR(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Tc-99	Tc-99	1.000E+00	2.838E-05	2.130E-05	1.679E-11	9.933E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	Ra-226+D	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Th-230	Pb-210+D	1.000E+00	9.944E-08	6.897E-07	4.751E-04	1.300E-03	7.590E-03	1.328E-02
Th-230	ΣDSR(j)		5.480E-03	6.126E-03	3.766E-02	6.907E-02	2.842E-01	4.779E-01

Dose/Source Ratios Summed Over All Pathways
 Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	Ra-228+D	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-232	Th-228+D	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-232	∑DSR(j)		6.163E-02	1.929E-01	2.118E+00	2.120E+00	2.089E+00	2.051E+00
U-234	U-234	1.000E+00	1.196E-03	1.194E-03	1.095E-03	1.004E-03	4.980E-04	2.074E-04
U-234	Th-230	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
U-234	Ra-226+D	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.901E-04	1.358E-03
U-234	Pb-210+D	1.000E+00	2.241E-13	3.337E-12	7.887E-08	4.531E-07	1.304E-05	3.847E-05
U-234	∑DSR(j)		1.196E-03	1.194E-03	1.105E-03	1.035E-03	1.016E-03	1.625E-03
U-235+D	U-235+D	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235+D	Pa-231	1.000E+00	4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
U-235+D	Ac-227+D	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
U-235+D	∑DSR(j)		1.110E-01	1.108E-01	1.020E-01	9.374E-02	4.860E-02	2.239E-02
U-238	U-238	5.400E-05	5.716E-08	5.706E-08	5.237E-08	4.799E-08	2.384E-08	9.942E-09
U-238+D	U-238+D	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03
U-238+D	U-234	9.999E-01	1.694E-09	5.075E-09	1.568E-07	2.860E-07	7.070E-07	5.890E-07
U-238+D	Th-230	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
U-238+D	Ra-226+D	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
U-238+D	Pb-210+D	9.999E-01	1.272E-19	3.918E-18	2.985E-12	3.536E-11	5.203E-09	2.800E-08
U-238+D	∑DSR(j)		2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.245E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	1.376E+03	1.378E+03	1.495E+03	1.624E+03	3.157E+03	7.242E+03
Cs-137	3.226E+01	3.303E+01	1.046E+02	3.390E+02	4.137E+06	5.304E+11
Np-237	9.355E+01	9.371E+01	1.017E+02	1.105E+02	2.156E+02	4.965E+02
Pu-238	2.750E+03	2.772E+03	4.125E+03	6.189E+03	1.583E+05	6.998E+06
Pu-239	2.511E+03	2.512E+03	2.541E+03	2.572E+03	2.834E+03	3.198E+03
Pu-240	2.521E+03	2.522E+03	2.561E+03	2.602E+03	2.957E+03	3.468E+03
Tc-99	5.286E+05	7.042E+05	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	1.373E+01	1.972E+01	1.014E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	2.737E+03	2.449E+03	3.983E+02	2.172E+02	5.279E+01	3.139E+01
Th-232	2.434E+02	7.776E+01	7.083E+00	7.076E+00	7.180E+00	7.313E+00
U-234	1.254E+04	1.257E+04	1.358E+04	1.449E+04	1.476E+04	9.229E+03
U-235	1.351E+02	1.353E+02	1.471E+02	1.600E+02	3.086E+02	6.700E+02
U-238	6.148E+02	6.158E+02	6.709E+02	7.323E+02	1.474E+03	3.533E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 34.61 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	1.090E-02	1.376E+03	1.029E-02	1.457E+03
Cs-137	1.000E+00	0.000E+00	4.650E-01	3.226E+01	2.060E-01	7.281E+01
Np-237	1.000E+00	0.000E+00	1.603E-01	9.355E+01	1.513E-01	9.912E+01
Pu-238	1.000E+00	0.000E+00	5.455E-03	2.750E+03	4.120E-03	3.641E+03
Pu-239	1.000E+00	0.000E+00	5.974E-03	2.511E+03	5.924E-03	2.532E+03
Pu-240	1.000E+00	0.000E+00	5.951E-03	2.521E+03	5.885E-03	2.549E+03
Tc-99	1.000E+00	0.000E+00	2.838E-05	5.286E+05	1.388E-09	1.081E+10
Th-228	1.000E+00	0.000E+00	1.093E+00	1.373E+01	3.913E-06	3.834E+06
Th-230	1.000E+00	1.000E+03	4.779E-01	3.139E+01	2.781E-02	5.395E+02
Th-232	1.000E+00	68.6 ± 0.1	2.122E+00	7.070E+00	2.085E+00	7.194E+00
U-234	1.000E+00	1.000E+03	1.625E-03	9.229E+03	1.130E-03	1.327E+04
U-235	1.000E+00	0.000E+00	1.110E-01	1.351E+02	1.046E-01	1.433E+02
U-238	1.000E+00	0.000E+00	2.440E-02	6.148E+02	2.297E-02	6.531E+02

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Np-237	Am-241	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Np-237	Np-237	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237	∑DOSE(j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.020E-02
U-233	Am-241	1.000E+00	3.273E-16	2.288E-15	2.301E-12	8.374E-12	1.054E-10	1.803E-10
U-233	Np-237	1.000E+00	3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
U-233	∑DOSE(j)		3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
Th-229	Am-241	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.524E-09
Th-229	Np-237	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Th-229	∑DOSE(j)		1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Cs-137	Cs-137	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	∑DOSE(j)		5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
U-234	Pu-238	1.000E+00	1.691E-09	5.050E-09	1.341E-07	2.113E-07	2.127E-07	9.227E-08
U-234	U-234	1.000E+00	1.196E-03	1.194E-03	1.095E-03	1.004E-03	4.980E-04	2.074E-04
U-234	U-238	9.999E-01	1.694E-09	5.075E-09	1.568E-07	2.860E-07	7.070E-07	5.890E-07
U-234	∑DOSE(j)		1.196E-03	1.194E-03	1.096E-03	1.004E-03	4.989E-04	2.081E-04
Th-230	Pu-238	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	U-234	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
Th-230	U-238	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
Th-230	∑DOSE(j)		5.157E-03	5.157E-03	5.148E-03	5.138E-03	5.056E-03	4.948E-03
Ra-226	Pu-238	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.159E-09	1.136E-07	3.988E-07
Ra-226	Th-230	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Ra-226	U-234	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.901E-04	1.358E-03
Ra-226	U-238	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
Ra-226	∑DOSE(j)		3.229E-04	9.683E-04	3.204E-02	6.267E-02	2.720E-01	4.610E-01
Pb-210	Pu-238	1.000E+00	1.270E-19	3.909E-18	2.796E-12	3.103E-11	2.939E-09	1.121E-08
Pb-210	Th-230	1.000E+00	9.944E-08	6.897E-07	4.751E-04	1.300E-03	7.590E-03	1.328E-02
Pb-210	U-234	1.000E+00	2.241E-13	3.337E-12	7.887E-08	4.531E-07	1.304E-05	3.847E-05
Pb-210	U-238	9.999E-01	1.272E-19	3.918E-18	2.985E-12	3.536E-11	5.203E-09	2.800E-08
Pb-210	∑DOSE(j)		9.944E-08	6.897E-07	4.752E-04	1.301E-03	7.603E-03	1.332E-02
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
U-235	Pu-239	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
U-235	U-235	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235	∑DOSE(j)		1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	1.521E-16	1.064E-15	1.122E-12	4.284E-12	8.014E-11	2.309E-10
Pa-231	U-235	1.000E+00	4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
Pa-231	ΣDOSE(j)		4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
Ac-227	Pu-239	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Ac-227	U-235	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Ac-227	ΣDOSE(j)		3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	ΣDOSE(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
U-236	Pu-240	1.000E+00	1.660E-11	4.977E-11	1.593E-09	3.013E-09	1.013E-08	1.285E-08
Th-232	Pu-240	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	ΣDOSE(j)		5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Ra-228	Pu-240	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Ra-228	Th-232	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Ra-228	ΣDOSE(j)		4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-228	Pu-240	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Th-228	Th-228	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-228	ΣDOSE(j)		1.101E+00	8.122E-01	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Tc-99	Tc-99	1.000E+00	2.838E-05	2.130E-05	1.679E-11	9.933E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.716E-08	5.706E-08	5.237E-08	4.799E-08	2.384E-08	9.942E-09
U-238	U-238	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03
U-238	ΣDOSE(j)		2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 15 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	∑S(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	∑S(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	∑S(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	∑S(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	∑S(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	∑S(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	∑S(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 129.38 seconds

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1 (50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1 (51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1 (52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1 (53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1 (54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1 (55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1 (56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1 (57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1 (58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1 (59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1 (60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1 (61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.104E+00	2.035E+00	DCF2 (1)
B-1	Am-241	3.552E-01	3.552E-01	DCF2 (2)
B-1	Cs-137+D	1.443E-04	1.443E-04	DCF2 (3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2 (4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2 (5)
B-1	Pb-210+D	3.697E-02	2.072E-02	DCF2 (6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2 (7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2 (9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2 (10)
B-1	Ra-226+D	3.526E-02	3.515E-02	DCF2 (12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2 (13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2 (14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2 (15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2 (16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2 (17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2 (18)
B-1	U-233	3.552E-02	3.552E-02	DCF2 (19)
B-1	U-234	3.478E-02	3.478E-02	DCF2 (20)
B-1	U-235+D	3.145E-02	3.145E-02	DCF2 (21)
B-1	U-236	3.219E-02	3.219E-02	DCF2 (22)
B-1	U-238	2.960E-02	2.960E-02	DCF2 (23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2 (24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3 (1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3 (2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3 (3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3 (4)
D-1	Pa-231	2.627E-03	2.627E-03	DCF3 (5)
D-1	Pb-210+D	6.998E-03	2.553E-03	DCF3 (6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3 (7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3 (9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3 (10)
D-1	Ra-226+D	1.037E-03	1.036E-03	DCF3 (12)
D-1	Ra-228+D	2.555E-03	2.553E-03	DCF3 (13)
D-1	Tc-99	2.368E-06	2.368E-06	DCF3 (14)

Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.301E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.269E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.887E-04	1.887E-04	DCF3(19)
D-1	U-234	1.813E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.752E-04	1.739E-04	DCF3(21)
D-1	U-236	1.739E-04	1.739E-04	DCF3(22)
D-1	U-238	1.665E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.791E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)
D-5				

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.610E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.700E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV (1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV (3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE (1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE (2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE (3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV (1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV (2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV (3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY (1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY (2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY (3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET (1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET (2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET (3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters
 Thickness: 0.15 meters
 Cover Depth: 0.00 meters

Am-241 1.000E+00
 Cs-137 1.000E+00
 Np-237 1.000E+00
 Pu-238 1.000E+00
 Pu-239 1.000E+00
 Pu-240 1.000E+00
 Tc-99 1.000E+00
 Th-228 1.000E+00
 Th-230 1.000E+00
 Th-232 1.000E+00
 U-234 1.000E+00
 U-235 1.000E+00
 U-238 1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.950E+00	1.739E+00	2.597E+00	2.507E+00	2.518E+00	2.599E+00
M(t):	7.800E-02	6.954E-02	1.039E-01	1.003E-01	1.007E-01	1.039E-01

Maximum TDOSE(t): 2.625E+00 mrem/yr at t = 34.61 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.461E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.816E-03	0.0022	1.456E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.331E-03	0.0016
Cs-137	2.059E-01	0.0784	2.746E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.307E-04	0.0000
Np-237	1.489E-01	0.0567	7.582E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.401E-03	0.0009
Pu-238	1.472E-05	0.0000	1.330E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.972E-03	0.0015
Pu-239	4.162E-05	0.0000	1.913E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.691E-03	0.0022
Pu-240	1.872E-05	0.0000	1.908E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.676E-03	0.0022
Tc-99	7.621E-10	0.0000	8.888E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.248E-10	0.0000
Th-228	3.903E-06	0.0000	2.107E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.879E-09	0.0000
Th-230	2.248E-02	0.0086	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.165E-03	0.0020
Th-232	2.061E+00	0.7850	2.704E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.406E-02	0.0092
U-234	5.686E-05	0.0000	1.426E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.059E-03	0.0004
U-235	1.036E-01	0.0395	1.328E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.042E-03	0.0004
U-238	2.191E-02	0.0083	1.211E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.045E-03	0.0004
Total	2.569E+00	0.9788	1.207E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.457E-02	0.0208

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.461E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.029E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.060E-01	0.0785
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-01	0.0576
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.120E-03	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.924E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.885E-03	0.0022
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-09	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.913E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.781E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.085E+00	0.7943
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.130E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-01	0.0399
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-02	0.0087
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.625E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.160E-03	0.0032	1.542E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.588E-03	0.0024
Cs-137	4.647E-01	0.2383	6.197E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.950E-04	0.0002
Np-237	1.577E-01	0.0809	8.033E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.543E-03	0.0013
Pu-238	1.948E-05	0.0000	1.761E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.259E-03	0.0027
Pu-239	4.197E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Tc-99	1.558E-05	0.0000	1.817E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.277E-05	0.0000
Th-228	1.090E+00	0.5589	5.883E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.759E-03	0.0014
Th-230	4.966E-04	0.0003	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.823E-03	0.0025
Th-232	5.523E-02	0.0283	1.788E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.220E-03	0.0032
U-234	5.667E-05	0.0000	1.510E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.124E-03	0.0006
U-235	1.099E-01	0.0564	1.366E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.086E-03	0.0006
U-238	2.328E-02	0.0119	1.286E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-03	0.0006
Total	1.908E+00	0.9782	1.237E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.130E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-02	0.0056
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.650E-01	0.2384
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.603E-01	0.0822
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.455E-03	0.0028
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.974E-03	0.0031
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.951E-03	0.0031
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.838E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E+00	0.5603
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.480E-03	0.0028
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.163E-02	0.0316
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.196E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-01	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.440E-02	0.0125
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.149E-03	0.0035	1.540E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0026
Cs-137	4.539E-01	0.2611	6.053E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.881E-04	0.0002
Np-237	1.575E-01	0.0906	8.020E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.539E-03	0.0015
Pu-238	1.932E-05	0.0000	1.747E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.217E-03	0.0030
Pu-239	4.196E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.738E-03	0.0033
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.737E-03	0.0033
Tc-99	1.170E-05	0.0000	1.364E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.589E-06	0.0000
Th-228	7.586E-01	0.4364	4.095E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.920E-03	0.0011
Th-230	1.139E-03	0.0007	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.826E-03	0.0028
Th-232	1.847E-01	0.1062	1.839E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.024E-03	0.0046
U-234	5.658E-05	0.0000	1.508E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-03	0.0006
U-235	1.097E-01	0.0631	1.364E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-03	0.0006
U-238	2.324E-02	0.0134	1.284E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-03	0.0006
Total	1.695E+00	0.9750	1.222E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.219E-02	0.0243

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.088E-02	0.0063
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.542E-01	0.2612
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-01	0.0921
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.411E-03	0.0031
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.972E-03	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.949E-03	0.0034
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.130E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.606E-01	0.4375
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.126E-03	0.0035
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.929E-01	0.1110
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.194E-03	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-01	0.0638
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.436E-02	0.0140
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.739E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.670E-03	0.0022	1.419E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.221E-03	0.0016
Cs-137	1.433E-01	0.0552	1.912E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.099E-05	0.0000
Np-237	1.451E-01	0.0559	7.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.340E-03	0.0009
Pu-238	1.299E-05	0.0000	1.174E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.506E-03	0.0013
Pu-239	4.147E-05	0.0000	1.906E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.670E-03	0.0022
Pu-240	1.863E-05	0.0000	1.899E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.648E-03	0.0022
Tc-99	9.220E-12	0.0000	1.075E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.558E-12	0.0000
Th-228	1.476E-08	0.0000	7.966E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-11	0.0000
Th-230	3.209E-02	0.0124	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.410E-03	0.0021
Th-232	2.093E+00	0.8059	2.718E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.430E-02	0.0094
U-234	5.908E-05	0.0000	1.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.032E-03	0.0004
U-235	1.009E-01	0.0389	1.321E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-03	0.0004
U-238	2.133E-02	0.0082	1.179E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.017E-03	0.0004
Total	2.542E+00	0.9787	1.185E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.426E-02	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.434E-01	0.0552
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.475E-01	0.0568
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.636E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.902E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.856E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-11	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.480E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.766E-02	0.0145
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.118E+00	0.8154
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-01	0.0393
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.236E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.597E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.219E-03	0.0021	1.306E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.884E-03	0.0015
Cs-137	4.422E-02	0.0176	5.897E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.807E-05	0.0000
Np-237	1.335E-01	0.0532	6.799E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-03	0.0009
Pu-238	8.667E-06	0.0000	7.826E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.337E-03	0.0009
Pu-239	4.098E-05	0.0000	1.883E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.602E-03	0.0022
Pu-240	1.834E-05	0.0000	1.869E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.559E-03	0.0022
Tc-99	5.455E-18	0.0000	6.361E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.472E-18	0.0000
Th-228	1.998E-16	0.0000	1.079E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.058E-19	0.0000
Th-230	6.258E-02	0.0250	1.612E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.333E-03	0.0025
Th-232	2.095E+00	0.8357	2.716E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.430E-02	0.0097
U-234	7.466E-05	0.0000	1.281E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.479E-04	0.0004
U-235	9.275E-02	0.0370	1.315E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.810E-04	0.0004
U-238	1.954E-02	0.0078	1.080E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.324E-04	0.0004
Total	2.453E+00	0.9784	1.122E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.306E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.234E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.424E-02	0.0176
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.357E-01	0.0541
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.424E-03	0.0010
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.831E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.764E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.933E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.003E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.907E-02	0.0275
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.120E+00	0.8455
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.035E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.374E-02	0.0374
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.048E-02	0.0082
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.507E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.690E-03	0.0011	6.707E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.995E-03	0.0008
Cs-137	3.624E-06	0.0000	4.833E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-09	0.0000
Np-237	6.845E-02	0.0272	3.489E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
Pu-238	4.606E-07	0.0000	3.052E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.124E-05	0.0000
Pu-239	3.722E-05	0.0000	1.709E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.085E-03	0.0020
Pu-240	1.614E-05	0.0000	1.645E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.893E-03	0.0019
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.707E-01	0.1075	1.627E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E-02	0.0053
Th-232	2.065E+00	0.8201	2.677E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.395E-02	0.0095
U-234	5.125E-04	0.0002	6.775E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.972E-04	0.0002
U-235	4.785E-02	0.0190	1.295E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.355E-04	0.0003
U-238	9.708E-03	0.0039	5.374E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.637E-04	0.0002
Total	2.465E+00	0.9790	8.959E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.208E-02	0.0207

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-03	0.0019
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.959E-02	0.0276
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.475E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.294E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.073E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.842E-01	0.1129
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.089E+00	0.8297
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.016E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.860E-02	0.0193
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.018E-02	0.0040
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.518E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.174E-03	0.0005	2.917E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.678E-04	0.0003
Cs-137	2.826E-11	0.0000	3.769E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.794E-14	0.0000
Np-237	2.971E-02	0.0114	1.517E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.808E-04	0.0002
Pu-238	4.078E-07	0.0000	5.417E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.682E-06	0.0000
Pu-239	3.300E-05	0.0000	1.515E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.506E-03	0.0017
Pu-240	1.376E-05	0.0000	1.402E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.171E-03	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.582E-01	0.1763	1.631E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E-02	0.0075
Th-232	2.027E+00	0.7802	2.628E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.351E-02	0.0090
U-234	1.364E-03	0.0005	3.310E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.581E-04	0.0001
U-235	2.181E-02	0.0084	1.208E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.652E-04	0.0002
U-238	4.050E-03	0.0016	2.246E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-04	0.0001
Total	2.544E+00	0.9789	7.796E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.406E-02	0.0208

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.071E-03	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.828E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.021E-02	0.0116
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.144E-06	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.691E-03	0.0018
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.325E-03	0.0017
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.779E-01	0.1839
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E+00	0.7893
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.239E-02	0.0086
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.245E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.599E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_25MREM-WW-QC.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Am-241	Np-237+D	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Am-241	U-233	1.000E+00	3.273E-16	2.288E-15	2.301E-12	8.374E-12	1.054E-10	1.803E-10
Am-241	Th-229+D	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.524E-09
Am-241	ΣDSR(j)		1.090E-02	1.088E-02	1.003E-02	9.234E-03	4.752E-03	2.071E-03
Cs-137+D	Cs-137+D	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Np-237+D	Np-237+D	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237+D	U-233	1.000E+00	3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
Np-237+D	Th-229+D	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Np-237+D	ΣDSR(j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.021E-02
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	U-234	1.000E+00	1.691E-09	5.050E-09	1.341E-07	2.113E-07	2.127E-07	9.227E-08
Pu-238	Th-230	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Pu-238	Ra-226+D	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.159E-09	1.136E-07	3.988E-07
Pu-238	Pb-210+D	1.000E+00	1.270E-19	3.909E-18	2.796E-12	3.103E-11	2.939E-09	1.121E-08
Pu-238	ΣDSR(j)		5.455E-03	5.411E-03	3.636E-03	2.424E-03	9.475E-05	2.144E-06
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
Pu-239	U-235+D	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
Pu-239	Pa-231	1.000E+00	1.521E-16	1.064E-15	1.122E-12	4.284E-12	8.014E-11	2.309E-10
Pu-239	Ac-227+D	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Pu-239	ΣDSR(j)		5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.294E-03	4.691E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	U-236	1.000E+00	1.660E-11	4.977E-11	1.593E-09	3.013E-09	1.013E-08	1.285E-08
Pu-240	Th-232	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Pu-240	Ra-228+D	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Pu-240	Th-228+D	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Pu-240	ΣDSR(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Tc-99	Tc-99	1.000E+00	2.838E-05	2.130E-05	1.679E-11	9.933E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	Ra-226+D	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Th-230	Pb-210+D	1.000E+00	9.944E-08	6.897E-07	4.751E-04	1.300E-03	7.590E-03	1.328E-02
Th-230	ΣDSR(j)		5.480E-03	6.126E-03	3.766E-02	6.907E-02	2.842E-01	4.779E-01

Dose/Source Ratios Summed Over All Pathways
 Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	Ra-228+D	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-232	Th-228+D	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-232	∑DSR(j)		6.163E-02	1.929E-01	2.118E+00	2.120E+00	2.089E+00	2.051E+00
U-234	U-234	1.000E+00	1.196E-03	1.194E-03	1.095E-03	1.004E-03	4.980E-04	2.074E-04
U-234	Th-230	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
U-234	Ra-226+D	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.901E-04	1.358E-03
U-234	Pb-210+D	1.000E+00	2.241E-13	3.337E-12	7.887E-08	4.531E-07	1.304E-05	3.847E-05
U-234	∑DSR(j)		1.196E-03	1.194E-03	1.105E-03	1.035E-03	1.016E-03	1.625E-03
U-235+D	U-235+D	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235+D	Pa-231	1.000E+00	4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
U-235+D	Ac-227+D	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
U-235+D	∑DSR(j)		1.110E-01	1.108E-01	1.020E-01	9.374E-02	4.860E-02	2.239E-02
U-238	U-238	5.400E-05	5.716E-08	5.706E-08	5.237E-08	4.799E-08	2.384E-08	9.942E-09
U-238+D	U-238+D	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03
U-238+D	U-234	9.999E-01	1.694E-09	5.075E-09	1.568E-07	2.860E-07	7.070E-07	5.890E-07
U-238+D	Th-230	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
U-238+D	Ra-226+D	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
U-238+D	Pb-210+D	9.999E-01	1.272E-19	3.918E-18	2.985E-12	3.536E-11	5.203E-09	2.800E-08
U-238+D	∑DSR(j)		2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.245E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	2.293E+03	2.297E+03	2.492E+03	2.708E+03	5.261E+03	1.207E+04
Cs-137	5.376E+01	5.504E+01	1.743E+02	5.651E+02	6.894E+06	8.841E+11
Np-237	1.559E+02	1.562E+02	1.695E+02	1.842E+02	3.593E+02	8.275E+02
Pu-238	4.583E+03	4.621E+03	6.876E+03	1.032E+04	2.639E+05	1.166E+07
Pu-239	4.185E+03	4.186E+03	4.236E+03	4.287E+03	4.723E+03	5.330E+03
Pu-240	4.201E+03	4.203E+03	4.269E+03	4.337E+03	4.928E+03	5.780E+03
Tc-99	8.811E+05	1.174E+06	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	2.288E+01	3.287E+01	1.690E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	4.562E+03	4.081E+03	6.639E+02	3.619E+02	8.798E+01	5.232E+01
Th-232	4.057E+02	1.296E+02	1.181E+01	1.179E+01	1.197E+01	1.219E+01
U-234	2.091E+04	2.094E+04	2.263E+04	2.415E+04	2.460E+04	1.538E+04
U-235	2.251E+02	2.255E+02	2.452E+02	2.667E+02	5.144E+02	1.117E+03
U-238	1.025E+03	1.026E+03	1.118E+03	1.220E+03	2.457E+03	5.889E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 34.61 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	1.090E-02	2.293E+03	1.029E-02	2.429E+03
Cs-137	1.000E+00	0.000E+00	4.650E-01	5.376E+01	2.060E-01	1.213E+02
Np-237	1.000E+00	0.000E+00	1.603E-01	1.559E+02	1.513E-01	1.652E+02
Pu-238	1.000E+00	0.000E+00	5.455E-03	4.583E+03	4.120E-03	6.069E+03
Pu-239	1.000E+00	0.000E+00	5.974E-03	4.185E+03	5.924E-03	4.220E+03
Pu-240	1.000E+00	0.000E+00	5.951E-03	4.201E+03	5.885E-03	4.248E+03
Tc-99	1.000E+00	0.000E+00	2.838E-05	8.811E+05	1.388E-09	*1.697E+10
Th-228	1.000E+00	0.000E+00	1.093E+00	2.288E+01	3.913E-06	6.390E+06
Th-230	1.000E+00	1.000E+03	4.779E-01	5.232E+01	2.781E-02	8.991E+02
Th-232	1.000E+00	68.6 ± 0.1	2.122E+00	1.178E+01	2.085E+00	1.199E+01
U-234	1.000E+00	1.000E+03	1.625E-03	1.538E+04	1.130E-03	2.211E+04
U-235	1.000E+00	0.000E+00	1.110E-01	2.251E+02	1.046E-01	2.389E+02
U-238	1.000E+00	0.000E+00	2.440E-02	1.025E+03	2.297E-02	1.089E+03

*At specific activity limit

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Np-237	Am-241	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Np-237	Np-237	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237	∑DOSE (j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.020E-02
U-233	Am-241	1.000E+00	3.273E-16	2.288E-15	2.301E-12	8.374E-12	1.054E-10	1.803E-10
U-233	Np-237	1.000E+00	3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
U-233	∑DOSE (j)		3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
Th-229	Am-241	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.524E-09
Th-229	Np-237	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Th-229	∑DOSE (j)		1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Cs-137	Cs-137	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	∑DOSE (j)		5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
U-234	Pu-238	1.000E+00	1.691E-09	5.050E-09	1.341E-07	2.113E-07	2.127E-07	9.227E-08
U-234	U-234	1.000E+00	1.196E-03	1.194E-03	1.095E-03	1.004E-03	4.980E-04	2.074E-04
U-234	U-238	9.999E-01	1.694E-09	5.075E-09	1.568E-07	2.860E-07	7.070E-07	5.890E-07
U-234	∑DOSE (j)		1.196E-03	1.194E-03	1.096E-03	1.004E-03	4.989E-04	2.081E-04
Th-230	Pu-238	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	U-234	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
Th-230	U-238	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
Th-230	∑DOSE (j)		5.157E-03	5.157E-03	5.148E-03	5.138E-03	5.056E-03	4.948E-03
Ra-226	Pu-238	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.159E-09	1.136E-07	3.988E-07
Ra-226	Th-230	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Ra-226	U-234	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.901E-04	1.358E-03
Ra-226	U-238	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
Ra-226	∑DOSE (j)		3.229E-04	9.683E-04	3.204E-02	6.267E-02	2.720E-01	4.610E-01
Pb-210	Pu-238	1.000E+00	1.270E-19	3.909E-18	2.796E-12	3.103E-11	2.939E-09	1.121E-08
Pb-210	Th-230	1.000E+00	9.944E-08	6.897E-07	4.751E-04	1.300E-03	7.590E-03	1.328E-02
Pb-210	U-234	1.000E+00	2.241E-13	3.337E-12	7.887E-08	4.531E-07	1.304E-05	3.847E-05
Pb-210	U-238	9.999E-01	1.272E-19	3.918E-18	2.985E-12	3.536E-11	5.203E-09	2.800E-08
Pb-210	∑DOSE (j)		9.944E-08	6.897E-07	4.752E-04	1.301E-03	7.603E-03	1.332E-02
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
U-235	Pu-239	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
U-235	U-235	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235	∑DOSE (j)		1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	1.521E-16	1.064E-15	1.122E-12	4.284E-12	8.014E-11	2.309E-10
Pa-231	U-235	1.000E+00	4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
Pa-231	ΣDOSE(j)		4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
Ac-227	Pu-239	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Ac-227	U-235	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Ac-227	ΣDOSE(j)		3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	ΣDOSE(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
U-236	Pu-240	1.000E+00	1.660E-11	4.977E-11	1.593E-09	3.013E-09	1.013E-08	1.285E-08
Th-232	Pu-240	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	ΣDOSE(j)		5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Ra-228	Pu-240	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Ra-228	Th-232	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Ra-228	ΣDOSE(j)		4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-228	Pu-240	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Th-228	Th-228	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-228	ΣDOSE(j)		1.101E+00	8.122E-01	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Tc-99	Tc-99	1.000E+00	2.838E-05	2.130E-05	1.679E-11	9.933E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.716E-08	5.706E-08	5.237E-08	4.799E-08	2.384E-08	9.942E-09
U-238	U-238	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03
U-238	ΣDOSE(j)		2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 25 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	∑S(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	∑S(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	∑S(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	∑S(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	∑S(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	∑S(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	∑S(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 131.09 seconds

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: ICRP 60)	5.775E-02	5.775E-02	DCF1(1)
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(2)
A-1	Ac-228 (Source: ICRP 60)	5.662E+00	5.662E+00	DCF1(3)
A-1	Am-241 (Source: ICRP 60)	3.719E-02	3.719E-02	DCF1(4)
A-1	At-217 (Source: ICRP 60)	1.654E-03	1.654E-03	DCF1(5)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(6)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(7)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(8)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(9)
A-1	Bi-212 (Source: ICRP 60)	1.114E+00	1.114E+00	DCF1(10)
A-1	Bi-213 (Source: ICRP 60)	7.158E-01	7.158E-01	DCF1(11)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(12)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(13)
A-1	Fr-221 (Source: ICRP 60)	1.413E-01	1.413E-01	DCF1(14)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(15)
A-1	Np-237 (Source: ICRP 60)	6.971E-02	6.971E-02	DCF1(16)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(17)
A-1	Pa-233 (Source: ICRP 60)	9.419E-01	9.419E-01	DCF1(18)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(19)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(20)
A-1	Pb-209 (Source: ICRP 60)	7.550E-04	7.550E-04	DCF1(21)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(22)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(23)
A-1	Pb-212 (Source: ICRP 60)	6.466E-01	6.466E-01	DCF1(24)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(25)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(26)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(27)
A-1	Po-212 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(28)
A-1	Po-213 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(29)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(30)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(31)
A-1	Po-216 (Source: ICRP 60)	9.830E-05	9.830E-05	DCF1(32)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(33)
A-1	Pu-238 (Source: ICRP 60)	1.166E-04	1.166E-04	DCF1(34)
A-1	Pu-239 (Source: ICRP 60)	2.635E-04	2.635E-04	DCF1(35)
A-1	Pu-240 (Source: ICRP 60)	1.129E-04	1.129E-04	DCF1(36)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(37)
A-1	Ra-224 (Source: ICRP 60)	4.728E-02	4.728E-02	DCF1(38)
A-1	Ra-225 (Source: ICRP 60)	8.634E-03	8.634E-03	DCF1(39)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(40)
A-1	Ra-228 (Source: ICRP 60)	0.000E+00	0.000E+00	DCF1(41)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(42)
A-1	Rn-220 (Source: ICRP 60)	2.130E-03	2.130E-03	DCF1(43)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(44)
A-1	Tc-99 (Source: ICRP 60)	1.086E-04	1.086E-04	DCF1(45)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(46)
A-1	Th-228 (Source: ICRP 60)	7.176E-03	7.176E-03	DCF1(47)
A-1	Th-229 (Source: ICRP 60)	2.897E-01	2.897E-01	DCF1(48)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(49)

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(50)
A-1	Th-232 (Source: ICRP 60)	4.560E-04	4.560E-04	DCF1(51)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(52)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(53)
A-1	Tl-208 (Source: ICRP 60)	2.186E+01	2.186E+01	DCF1(54)
A-1	Tl-209 (Source: ICRP 60)	1.226E+01	1.226E+01	DCF1(55)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(56)
A-1	U-233 (Source: ICRP 60)	1.265E-03	1.265E-03	DCF1(57)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(58)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(59)
A-1	U-236 (Source: ICRP 60)	1.781E-04	1.781E-04	DCF1(60)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(61)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.104E+00	2.035E+00	DCF2(1)
B-1	Am-241	3.552E-01	3.552E-01	DCF2(2)
B-1	Cs-137+D	1.443E-04	1.443E-04	DCF2(3)
B-1	Np-237+D	1.850E-01	1.850E-01	DCF2(4)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(5)
B-1	Pb-210+D	3.697E-02	2.072E-02	DCF2(6)
B-1	Pu-238	4.070E-01	4.070E-01	DCF2(7)
B-1	Pu-239	4.440E-01	4.440E-01	DCF2(9)
B-1	Pu-240	4.440E-01	4.440E-01	DCF2(10)
B-1	Ra-226+D	3.526E-02	3.515E-02	DCF2(12)
B-1	Ra-228+D	5.929E-02	5.920E-02	DCF2(13)
B-1	Tc-99	4.810E-05	4.810E-05	DCF2(14)
B-1	Th-228+D	1.614E-01	1.480E-01	DCF2(15)
B-1	Th-229+D	9.481E-01	8.880E-01	DCF2(16)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(17)
B-1	Th-232	4.070E-01	4.070E-01	DCF2(18)
B-1	U-233	3.552E-02	3.552E-02	DCF2(19)
B-1	U-234	3.478E-02	3.478E-02	DCF2(20)
B-1	U-235+D	3.145E-02	3.145E-02	DCF2(21)
B-1	U-236	3.219E-02	3.219E-02	DCF2(22)
B-1	U-238	2.960E-02	2.960E-02	DCF2(23)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(24)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Am-241	7.400E-04	7.400E-04	DCF3(2)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(3)
D-1	Np-237+D	4.102E-04	4.070E-04	DCF3(4)
D-1	Pa-231	2.627E-03	2.627E-03	DCF3(5)
D-1	Pb-210+D	6.998E-03	2.553E-03	DCF3(6)
D-1	Pu-238	8.510E-04	8.510E-04	DCF3(7)
D-1	Pu-239	9.250E-04	9.250E-04	DCF3(9)
D-1	Pu-240	9.250E-04	9.250E-04	DCF3(10)
D-1	Ra-226+D	1.037E-03	1.036E-03	DCF3(12)
D-1	Ra-228+D	2.555E-03	2.553E-03	DCF3(13)
D-1	Tc-99	2.368E-06	2.368E-06	DCF3(14)

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-228+D	5.301E-04	2.664E-04	DCF3(15)
D-1	Th-229+D	2.269E-03	1.813E-03	DCF3(16)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(17)
D-1	Th-232	8.510E-04	8.510E-04	DCF3(18)
D-1	U-233	1.887E-04	1.887E-04	DCF3(19)
D-1	U-234	1.813E-04	1.813E-04	DCF3(20)
D-1	U-235+D	1.752E-04	1.739E-04	DCF3(21)
D-1	U-236	1.739E-04	1.739E-04	DCF3(22)
D-1	U-238	1.665E-04	1.665E-04	DCF3(23)
D-1	U-238+D	1.791E-04	1.665E-04	DCF3(24)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(3,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(4,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(5,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(6,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(6,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(7,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(12,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(12,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(13,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	5.000E+00	5.000E+00	RTF(14,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(15,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(16,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(17,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(17,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(17,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(18,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(18,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(18,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(19,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(20,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(20,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-34				

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(24,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(24,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(24,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(4,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(5,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(6,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(12,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(12,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(13,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(13,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(14,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(14,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(15,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(16,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(16,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(17,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(17,2)
D-5				

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC (18,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (18,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (19,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (19,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC (20,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (20,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (21,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (21,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC (22,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (22,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC (23,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (23,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC (24,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (24,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+02	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(23)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(21)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(23)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.168E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	7.000E+01	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.669E-03	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	2.000E-01	0.000E+00	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.868E-01	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (21)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (21,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC (22)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (22,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.610E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.700E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET (2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET (3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET (4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV (1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV (3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE (1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE (2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE (3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV (1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV (2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV (3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY (1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY (2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY (3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET (1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET (2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET (3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

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Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-WW-QC.RAD

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 20000.00 square meters
 Thickness: 0.15 meters
 Cover Depth: 0.00 meters

Am-241 1.000E+00
 Cs-137 1.000E+00
 Np-237 1.000E+00
 Pu-238 1.000E+00
 Pu-239 1.000E+00
 Pu-240 1.000E+00
 Tc-99 1.000E+00
 Th-228 1.000E+00
 Th-230 1.000E+00
 Th-232 1.000E+00
 U-234 1.000E+00
 U-235 1.000E+00
 U-238 1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.950E+00	1.739E+00	2.597E+00	2.507E+00	2.518E+00	2.599E+00
M(t):	1.950E-02	1.739E-02	2.597E-02	2.507E-02	2.518E-02	2.599E-02

Maximum TDOSE(t): 2.625E+00 mrem/yr at t = 34.61 ± 0.07 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.461E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.816E-03	0.0022	1.456E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.331E-03	0.0016
Cs-137	2.059E-01	0.0784	2.746E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.307E-04	0.0000
Np-237	1.489E-01	0.0567	7.582E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.401E-03	0.0009
Pu-238	1.472E-05	0.0000	1.330E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.972E-03	0.0015
Pu-239	4.162E-05	0.0000	1.913E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.691E-03	0.0022
Pu-240	1.872E-05	0.0000	1.908E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.676E-03	0.0022
Tc-99	7.621E-10	0.0000	8.888E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.248E-10	0.0000
Th-228	3.903E-06	0.0000	2.107E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.879E-09	0.0000
Th-230	2.248E-02	0.0086	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.165E-03	0.0020
Th-232	2.061E+00	0.7850	2.704E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.406E-02	0.0092
U-234	5.686E-05	0.0000	1.426E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.059E-03	0.0004
U-235	1.036E-01	0.0395	1.328E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.042E-03	0.0004
U-238	2.191E-02	0.0083	1.211E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.045E-03	0.0004
Total	2.569E+00	0.9788	1.207E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.457E-02	0.0208

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.461E+01 years

Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.029E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.060E-01	0.0785
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-01	0.0576
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.120E-03	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.924E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.885E-03	0.0022
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.388E-09	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.913E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.781E-02	0.0106
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.085E+00	0.7943
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.130E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-01	0.0399
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-02	0.0087
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.625E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.160E-03	0.0032	1.542E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.588E-03	0.0024
Cs-137	4.647E-01	0.2383	6.197E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.950E-04	0.0002
Np-237	1.577E-01	0.0809	8.033E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.543E-03	0.0013
Pu-238	1.948E-05	0.0000	1.761E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.259E-03	0.0027
Pu-239	4.197E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.739E-03	0.0029
Tc-99	1.558E-05	0.0000	1.817E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.277E-05	0.0000
Th-228	1.090E+00	0.5589	5.883E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.759E-03	0.0014
Th-230	4.966E-04	0.0003	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.823E-03	0.0025
Th-232	5.523E-02	0.0283	1.788E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.220E-03	0.0032
U-234	5.667E-05	0.0000	1.510E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.124E-03	0.0006
U-235	1.099E-01	0.0564	1.366E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.086E-03	0.0006
U-238	2.328E-02	0.0119	1.286E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-03	0.0006
Total	1.908E+00	0.9782	1.237E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.130E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-02	0.0056
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.650E-01	0.2384
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.603E-01	0.0822
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.455E-03	0.0028
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.974E-03	0.0031
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.951E-03	0.0031
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.838E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E+00	0.5603
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.480E-03	0.0028
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.163E-02	0.0316
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.196E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-01	0.0569
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.440E-02	0.0125
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.149E-03	0.0035	1.540E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0026
Cs-137	4.539E-01	0.2611	6.053E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.881E-04	0.0002
Np-237	1.575E-01	0.0906	8.020E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.539E-03	0.0015
Pu-238	1.932E-05	0.0000	1.747E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.217E-03	0.0030
Pu-239	4.196E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.738E-03	0.0033
Pu-240	1.893E-05	0.0000	1.929E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.737E-03	0.0033
Tc-99	1.170E-05	0.0000	1.364E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.589E-06	0.0000
Th-228	7.586E-01	0.4364	4.095E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.920E-03	0.0011
Th-230	1.139E-03	0.0007	1.608E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.826E-03	0.0028
Th-232	1.847E-01	0.1062	1.839E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.024E-03	0.0046
U-234	5.658E-05	0.0000	1.508E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-03	0.0006
U-235	1.097E-01	0.0631	1.364E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-03	0.0006
U-238	2.324E-02	0.0134	1.284E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-03	0.0006
Total	1.695E+00	0.9750	1.222E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.219E-02	0.0243

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.088E-02	0.0063
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.542E-01	0.2612
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-01	0.0921
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.411E-03	0.0031
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.972E-03	0.0034
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.949E-03	0.0034
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.130E-05	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.606E-01	0.4375
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.126E-03	0.0035
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.929E-01	0.1110
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.194E-03	0.0007
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.108E-01	0.0638
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.436E-02	0.0140
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.739E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.670E-03	0.0022	1.419E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.221E-03	0.0016
Cs-137	1.433E-01	0.0552	1.912E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.099E-05	0.0000
Np-237	1.451E-01	0.0559	7.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.340E-03	0.0009
Pu-238	1.299E-05	0.0000	1.174E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.506E-03	0.0013
Pu-239	4.147E-05	0.0000	1.906E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.670E-03	0.0022
Pu-240	1.863E-05	0.0000	1.899E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.648E-03	0.0022
Tc-99	9.220E-12	0.0000	1.075E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.558E-12	0.0000
Th-228	1.476E-08	0.0000	7.966E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-11	0.0000
Th-230	3.209E-02	0.0124	1.609E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.410E-03	0.0021
Th-232	2.093E+00	0.8059	2.718E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.430E-02	0.0094
U-234	5.908E-05	0.0000	1.390E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.032E-03	0.0004
U-235	1.009E-01	0.0389	1.321E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-03	0.0004
U-238	2.133E-02	0.0082	1.179E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.017E-03	0.0004
Total	2.542E+00	0.9787	1.185E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.426E-02	0.0209

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-02	0.0039
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.434E-01	0.0552
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.475E-01	0.0568
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.636E-03	0.0014
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.902E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.856E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-11	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.480E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.766E-02	0.0145
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.118E+00	0.8154
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-01	0.0393
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.236E-02	0.0086
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.597E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.219E-03	0.0021	1.306E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.884E-03	0.0015
Cs-137	4.422E-02	0.0176	5.897E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.807E-05	0.0000
Np-237	1.335E-01	0.0532	6.799E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-03	0.0009
Pu-238	8.667E-06	0.0000	7.826E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.337E-03	0.0009
Pu-239	4.098E-05	0.0000	1.883E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.602E-03	0.0022
Pu-240	1.834E-05	0.0000	1.869E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.559E-03	0.0022
Tc-99	5.455E-18	0.0000	6.361E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.472E-18	0.0000
Th-228	1.998E-16	0.0000	1.079E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.058E-19	0.0000
Th-230	6.258E-02	0.0250	1.612E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.333E-03	0.0025
Th-232	2.095E+00	0.8357	2.716E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.430E-02	0.0097
U-234	7.466E-05	0.0000	1.281E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.479E-04	0.0004
U-235	9.275E-02	0.0370	1.315E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.810E-04	0.0004
U-238	1.954E-02	0.0078	1.080E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.324E-04	0.0004
Total	2.453E+00	0.9784	1.122E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.306E-02	0.0212

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.234E-03	0.0037
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.424E-02	0.0176
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.357E-01	0.0541
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.424E-03	0.0010
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.831E-03	0.0023
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.764E-03	0.0023
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.933E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.003E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.907E-02	0.0275
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.120E+00	0.8455
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.035E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.374E-02	0.0374
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.048E-02	0.0082
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.507E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.690E-03	0.0011	6.707E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.995E-03	0.0008
Cs-137	3.624E-06	0.0000	4.833E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-09	0.0000
Np-237	6.845E-02	0.0272	3.489E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0004
Pu-238	4.606E-07	0.0000	3.052E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.124E-05	0.0000
Pu-239	3.722E-05	0.0000	1.709E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.085E-03	0.0020
Pu-240	1.614E-05	0.0000	1.645E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.893E-03	0.0019
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.707E-01	0.1075	1.627E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E-02	0.0053
Th-232	2.065E+00	0.8201	2.677E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.395E-02	0.0095
U-234	5.125E-04	0.0002	6.775E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.972E-04	0.0002
U-235	4.785E-02	0.0190	1.295E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.355E-04	0.0003
U-238	9.708E-03	0.0039	5.374E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.637E-04	0.0002
Total	2.465E+00	0.9790	8.959E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.208E-02	0.0207

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-03	0.0019
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E-06	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.959E-02	0.0276
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.475E-05	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.294E-03	0.0021
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.073E-03	0.0020
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.842E-01	0.1129
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.089E+00	0.8297
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.016E-03	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.860E-02	0.0193
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.018E-02	0.0040
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.518E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.174E-03	0.0005	2.917E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.678E-04	0.0003
Cs-137	2.826E-11	0.0000	3.769E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.794E-14	0.0000
Np-237	2.971E-02	0.0114	1.517E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.808E-04	0.0002
Pu-238	4.078E-07	0.0000	5.417E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.682E-06	0.0000
Pu-239	3.300E-05	0.0000	1.515E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.506E-03	0.0017
Pu-240	1.376E-05	0.0000	1.402E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.171E-03	0.0016
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.582E-01	0.1763	1.631E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E-02	0.0075
Th-232	2.027E+00	0.7802	2.628E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.351E-02	0.0090
U-234	1.364E-03	0.0005	3.310E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.581E-04	0.0001
U-235	2.181E-02	0.0084	1.208E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.652E-04	0.0002
U-238	4.050E-03	0.0016	2.246E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-04	0.0001
Total	2.544E+00	0.9789	7.796E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.406E-02	0.0208

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.071E-03	0.0008
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.828E-11	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.021E-02	0.0116
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.144E-06	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.691E-03	0.0018
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.325E-03	0.0017
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.779E-01	0.1839
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E+00	0.7893
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-03	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.239E-02	0.0086
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.245E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.599E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Am-241	Np-237+D	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Am-241	U-233	1.000E+00	3.273E-16	2.288E-15	2.301E-12	8.374E-12	1.054E-10	1.803E-10
Am-241	Th-229+D	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.524E-09
Am-241	ΣDSR(j)		1.090E-02	1.088E-02	1.003E-02	9.234E-03	4.752E-03	2.071E-03
Cs-137+D	Cs-137+D	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Np-237+D	Np-237+D	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237+D	U-233	1.000E+00	3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
Np-237+D	Th-229+D	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Np-237+D	ΣDSR(j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.021E-02
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	U-234	1.000E+00	1.691E-09	5.050E-09	1.341E-07	2.113E-07	2.127E-07	9.227E-08
Pu-238	Th-230	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Pu-238	Ra-226+D	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.159E-09	1.136E-07	3.988E-07
Pu-238	Pb-210+D	1.000E+00	1.270E-19	3.909E-18	2.796E-12	3.103E-11	2.939E-09	1.121E-08
Pu-238	ΣDSR(j)		5.455E-03	5.411E-03	3.636E-03	2.424E-03	9.475E-05	2.144E-06
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
Pu-239	U-235+D	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
Pu-239	Pa-231	1.000E+00	1.521E-16	1.064E-15	1.122E-12	4.284E-12	8.014E-11	2.309E-10
Pu-239	Ac-227+D	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Pu-239	ΣDSR(j)		5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.294E-03	4.691E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	U-236	1.000E+00	1.660E-11	4.977E-11	1.593E-09	3.013E-09	1.013E-08	1.285E-08
Pu-240	Th-232	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Pu-240	Ra-228+D	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Pu-240	Th-228+D	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Pu-240	ΣDSR(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Tc-99	Tc-99	1.000E+00	2.838E-05	2.130E-05	1.679E-11	9.933E-18	0.000E+00	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	Ra-226+D	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Th-230	Pb-210+D	1.000E+00	9.944E-08	6.897E-07	4.751E-04	1.300E-03	7.590E-03	1.328E-02
Th-230	ΣDSR(j)		5.480E-03	6.126E-03	3.766E-02	6.907E-02	2.842E-01	4.779E-01

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	Ra-228+D	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-232	Th-228+D	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-232	∑DSR(j)		6.163E-02	1.929E-01	2.118E+00	2.120E+00	2.089E+00	2.051E+00
U-234	U-234	1.000E+00	1.196E-03	1.194E-03	1.095E-03	1.004E-03	4.980E-04	2.074E-04
U-234	Th-230	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
U-234	Ra-226+D	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.901E-04	1.358E-03
U-234	Pb-210+D	1.000E+00	2.241E-13	3.337E-12	7.887E-08	4.531E-07	1.304E-05	3.847E-05
U-234	∑DSR(j)		1.196E-03	1.194E-03	1.105E-03	1.035E-03	1.016E-03	1.625E-03
U-235+D	U-235+D	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235+D	Pa-231	1.000E+00	4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
U-235+D	Ac-227+D	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
U-235+D	∑DSR(j)		1.110E-01	1.108E-01	1.020E-01	9.374E-02	4.860E-02	2.239E-02
U-238	U-238	5.400E-05	5.716E-08	5.706E-08	5.237E-08	4.799E-08	2.384E-08	9.942E-09
U-238+D	U-238+D	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03
U-238+D	U-234	9.999E-01	1.694E-09	5.075E-09	1.568E-07	2.860E-07	7.070E-07	5.890E-07
U-238+D	Th-230	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
U-238+D	Ra-226+D	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
U-238+D	Pb-210+D	9.999E-01	1.272E-19	3.918E-18	2.985E-12	3.536E-11	5.203E-09	2.800E-08
U-238+D	∑DSR(j)		2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.245E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	9.173E+03	9.188E+03	9.967E+03	1.083E+04	2.104E+04	4.828E+04
Cs-137	2.151E+02	2.202E+02	6.972E+02	2.260E+03	2.758E+07	3.536E+12
Np-237	6.237E+02	6.247E+02	6.780E+02	7.370E+02	1.437E+03	3.310E+03
Pu-238	1.833E+04	1.848E+04	2.750E+04	4.126E+04	1.055E+06	4.665E+07
Pu-239	1.674E+04	1.674E+04	1.694E+04	1.715E+04	1.889E+04	2.132E+04
Pu-240	1.681E+04	1.681E+04	1.708E+04	1.735E+04	1.971E+04	2.312E+04
Tc-99	3.524E+06	4.695E+06	*1.697E+10	*1.697E+10	*1.697E+10	*1.697E+10
Th-228	9.151E+01	1.315E+02	6.759E+09	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	1.825E+04	1.632E+04	2.655E+03	1.448E+03	3.519E+02	2.093E+02
Th-232	1.623E+03	5.184E+02	4.722E+01	4.717E+01	4.787E+01	4.875E+01
U-234	8.363E+04	8.377E+04	9.051E+04	9.658E+04	9.838E+04	6.153E+04
U-235	9.006E+02	9.021E+02	9.809E+02	1.067E+03	2.058E+03	4.467E+03
U-238	4.098E+03	4.106E+03	4.473E+03	4.882E+03	9.826E+03	2.355E+04

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 34.61 ± 0.07 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	1.090E-02	9.173E+03	1.029E-02	9.716E+03
Cs-137	1.000E+00	0.000E+00	4.650E-01	2.151E+02	2.060E-01	4.854E+02
Np-237	1.000E+00	0.000E+00	1.603E-01	6.237E+02	1.513E-01	6.608E+02
Pu-238	1.000E+00	0.000E+00	5.455E-03	1.833E+04	4.120E-03	2.427E+04
Pu-239	1.000E+00	0.000E+00	5.974E-03	1.674E+04	5.924E-03	1.688E+04
Pu-240	1.000E+00	0.000E+00	5.951E-03	1.681E+04	5.885E-03	1.699E+04
Tc-99	1.000E+00	0.000E+00	2.838E-05	3.524E+06	1.388E-09	*1.697E+10
Th-228	1.000E+00	0.000E+00	1.093E+00	9.151E+01	3.913E-06	2.556E+07
Th-230	1.000E+00	1.000E+03	4.779E-01	2.093E+02	2.781E-02	3.596E+03
Th-232	1.000E+00	68.6 ± 0.1	2.122E+00	4.713E+01	2.085E+00	4.796E+01
U-234	1.000E+00	1.000E+03	1.625E-03	6.153E+04	1.130E-03	8.846E+04
U-235	1.000E+00	0.000E+00	1.110E-01	9.006E+02	1.046E-01	9.556E+02
U-238	1.000E+00	0.000E+00	2.440E-02	4.098E+03	2.297E-02	4.354E+03

*At specific activity limit

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\AL_OUTSIDE-LA_FEB2011_100MREM-WW-QC.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.090E-02	1.088E-02	1.003E-02	9.229E-03	4.741E-03	2.062E-03
Np-237	Am-241	1.000E+00	2.596E-08	7.776E-08	2.413E-06	4.418E-06	1.129E-05	9.805E-06
Np-237	Np-237	1.000E+00	1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.958E-02	3.019E-02
Np-237	∑DOSE (j)		1.603E-01	1.601E-01	1.475E-01	1.357E-01	6.959E-02	3.020E-02
U-233	Am-241	1.000E+00	3.273E-16	2.288E-15	2.301E-12	8.374E-12	1.054E-10	1.803E-10
U-233	Np-237	1.000E+00	3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
U-233	∑DOSE (j)		3.032E-09	9.082E-09	2.812E-07	5.137E-07	1.290E-06	1.096E-06
Th-229	Am-241	1.000E+00	1.333E-18	1.998E-17	6.439E-13	4.756E-12	3.526E-10	1.524E-09
Th-229	Np-237	1.000E+00	1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Th-229	∑DOSE (j)		1.647E-11	1.152E-10	1.188E-07	4.437E-07	6.971E-06	1.629E-05
Cs-137	Cs-137	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
Pu-238	Pu-238	1.840E-09	1.004E-11	9.956E-12	6.690E-12	4.459E-12	1.737E-13	3.007E-15
Pu-238	Pu-238	1.000E+00	5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
Pu-238	∑DOSE (j)		5.455E-03	5.411E-03	3.636E-03	2.423E-03	9.442E-05	1.634E-06
U-234	Pu-238	1.000E+00	1.691E-09	5.050E-09	1.341E-07	2.113E-07	2.127E-07	9.227E-08
U-234	U-234	1.000E+00	1.196E-03	1.194E-03	1.095E-03	1.004E-03	4.980E-04	2.074E-04
U-234	U-238	9.999E-01	1.694E-09	5.075E-09	1.568E-07	2.860E-07	7.070E-07	5.890E-07
U-234	∑DOSE (j)		1.196E-03	1.194E-03	1.096E-03	1.004E-03	4.989E-04	2.081E-04
Th-230	Pu-238	1.000E+00	2.188E-14	1.527E-13	1.426E-10	4.840E-10	4.344E-09	7.034E-09
Th-230	Th-230	1.000E+00	5.157E-03	5.157E-03	5.145E-03	5.134E-03	5.041E-03	4.927E-03
Th-230	U-234	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
Th-230	U-238	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
Th-230	∑DOSE (j)		5.157E-03	5.157E-03	5.148E-03	5.138E-03	5.056E-03	4.948E-03
Ra-226	Pu-238	1.000E+00	6.854E-16	1.026E-14	3.104E-10	2.159E-09	1.136E-07	3.988E-07
Ra-226	Th-230	1.000E+00	3.229E-04	9.683E-04	3.204E-02	6.264E-02	2.715E-01	4.597E-01
Ra-226	U-234	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.901E-04	1.358E-03
Ra-226	U-238	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
Ra-226	∑DOSE (j)		3.229E-04	9.683E-04	3.204E-02	6.267E-02	2.720E-01	4.610E-01
Pb-210	Pu-238	1.000E+00	1.270E-19	3.909E-18	2.796E-12	3.103E-11	2.939E-09	1.121E-08
Pb-210	Th-230	1.000E+00	9.944E-08	6.897E-07	4.751E-04	1.300E-03	7.590E-03	1.328E-02
Pb-210	U-234	1.000E+00	2.241E-13	3.337E-12	7.887E-08	4.531E-07	1.304E-05	3.847E-05
Pb-210	U-238	9.999E-01	1.272E-19	3.918E-18	2.985E-12	3.536E-11	5.203E-09	2.800E-08
Pb-210	∑DOSE (j)		9.944E-08	6.897E-07	4.752E-04	1.301E-03	7.603E-03	1.332E-02
Pu-239	Pu-239	1.000E+00	5.974E-03	5.972E-03	5.902E-03	5.831E-03	5.293E-03	4.691E-03
U-235	Pu-239	1.000E+00	5.469E-11	1.639E-10	5.258E-09	9.963E-09	3.408E-08	4.439E-08
U-235	U-235	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235	∑DOSE (j)		1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	1.521E-16	1.064E-15	1.122E-12	4.284E-12	8.014E-11	2.309E-10
Pa-231	U-235	1.000E+00	4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
Pa-231	ΣDOSE(j)		4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
Ac-227	Pu-239	1.000E+00	8.716E-18	1.298E-16	3.060E-12	1.758E-11	5.183E-10	1.588E-09
Ac-227	U-235	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Ac-227	ΣDOSE(j)		3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
Pu-240	Pu-240	4.950E-08	2.946E-10	2.945E-10	2.899E-10	2.853E-10	2.511E-10	2.141E-10
Pu-240	Pu-240	1.000E+00	5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
Pu-240	ΣDOSE(j)		5.951E-03	5.949E-03	5.856E-03	5.764E-03	5.073E-03	4.325E-03
U-236	Pu-240	1.000E+00	1.660E-11	4.977E-11	1.593E-09	3.013E-09	1.013E-08	1.285E-08
Th-232	Pu-240	1.000E+00	1.346E-21	9.416E-21	9.946E-18	3.805E-17	7.245E-16	2.140E-15
Th-232	Th-232	1.000E+00	5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Th-232	ΣDOSE(j)		5.532E-03	5.532E-03	5.522E-03	5.512E-03	5.432E-03	5.333E-03
Ra-228	Pu-240	1.000E+00	5.892E-21	8.615E-20	1.076E-15	4.819E-15	1.046E-13	3.140E-13
Ra-228	Th-232	1.000E+00	4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Ra-228	ΣDOSE(j)		4.767E-02	1.357E-01	8.184E-01	8.187E-01	8.068E-01	7.922E-01
Th-228	Pu-240	1.000E+00	6.395E-22	1.830E-20	1.505E-15	7.199E-15	1.640E-13	4.949E-13
Th-228	Th-228	1.000E+00	1.093E+00	7.606E-01	1.480E-08	2.003E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	8.422E-03	5.167E-02	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Th-228	ΣDOSE(j)		1.101E+00	8.122E-01	1.294E+00	1.296E+00	1.277E+00	1.254E+00
Tc-99	Tc-99	1.000E+00	2.838E-05	2.130E-05	1.679E-11	9.933E-18	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.716E-08	5.706E-08	5.237E-08	4.799E-08	2.384E-08	9.942E-09
U-238	U-238	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03
U-238	ΣDOSE(j)		2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.983E-01	9.201E-01	8.466E-01	4.349E-01	1.891E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.234E-07	1.490E-05	2.742E-05	7.035E-05	6.112E-05
Np-237	Np-237	1.000E+00	1.000E+00	9.983E-01	9.199E-01	8.462E-01	4.339E-01	1.883E-01
Np-237	ΣS(j):		1.000E+00	9.983E-01	9.199E-01	8.463E-01	4.340E-01	1.884E-01
U-233	Am-241	1.000E+00	0.000E+00	7.070E-13	1.627E-09	5.977E-09	7.583E-08	1.299E-07
U-233	Np-237	1.000E+00	0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.292E-04	7.899E-04
U-233	ΣS(j):		0.000E+00	4.366E-06	2.007E-04	3.685E-04	9.293E-04	7.901E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	2.611E-12	1.958E-11	1.469E-09	6.356E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.906E-05	6.798E-05
Th-229	ΣS(j):		0.000E+00	2.062E-10	4.866E-07	1.835E-06	2.907E-05	6.799E-05
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
Pu-238	Pu-238	1.840E-09	1.840E-09	1.825E-09	1.226E-09	8.175E-10	3.185E-11	5.513E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
Pu-238	ΣS(j):		1.000E+00	9.919E-01	6.665E-01	4.443E-01	1.731E-02	2.996E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.821E-06	1.112E-04	1.760E-04	1.779E-04	7.716E-05
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.164E-01	8.397E-01	4.172E-01	1.740E-01
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	2.714E-08	9.305E-08	8.415E-07	1.364E-06
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	9.977E-01	9.954E-01	9.774E-01	9.554E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.804E-01	9.595E-01
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	2.023E-10	1.429E-09	7.601E-08	2.673E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	2.128E-02	4.181E-02	1.820E-01	3.082E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	4.331E-04	2.128E-02	4.183E-02	1.823E-01	3.091E-01
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	6.038E-11	6.832E-10	6.565E-08	2.507E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.661E-06	1.047E-02	2.891E-02	1.698E-01	2.973E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	6.661E-06	1.047E-02	2.892E-02	1.701E-01	2.981E-01
Pu-239	Pu-239	1.000E+00	1.000E+00	9.998E-01	9.880E-01	9.761E-01	8.861E-01	7.852E-01
U-235	Pu-239	1.000E+00	0.000E+00	9.839E-10	4.686E-08	8.924E-08	3.065E-07	3.994E-07
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
U-235	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

Summary : RESRAD Parameters for Wildlife Worker Outside Limited Area 100 mrem/yr

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	2.510E-11	9.680E-11	1.825E-09	5.264E-09
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Pa-231	∑S(j):		0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	9.388E-12	5.471E-11	1.629E-09	4.998E-09
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Ac-227	∑S(j):		0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
Pu-240	Pu-240	4.950E-08	4.950E-08	4.948E-08	4.872E-08	4.795E-08	4.220E-08	3.598E-08
Pu-240	Pu-240	1.000E+00	1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
Pu-240	∑S(j):		1.000E+00	9.997E-01	9.842E-01	9.686E-01	8.525E-01	7.268E-01
U-236	Pu-240	1.000E+00	0.000E+00	2.957E-08	1.406E-06	2.672E-06	9.015E-06	1.145E-05
Th-232	Pu-240	1.000E+00	0.000E+00	7.297E-19	1.763E-15	6.812E-15	1.307E-13	3.865E-13
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Th-232	∑S(j):		1.000E+00	1.000E+00	9.982E-01	9.963E-01	9.819E-01	9.640E-01
Ra-228	Pu-240	1.000E+00	0.000E+00	2.846E-20	1.278E-15	5.794E-15	1.269E-13	3.812E-13
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Ra-228	∑S(j):		0.000E+00	1.135E-01	9.942E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.128E-15	5.468E-15	1.257E-13	3.797E-13
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	1.354E-08	1.833E-16	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Th-228	∑S(j):		1.000E+00	7.147E-01	9.930E-01	9.947E-01	9.802E-01	9.625E-01
Tc-99	Tc-99	1.000E+00	1.000E+00	7.507E-01	5.917E-07	3.501E-13	0.000E+00	0.000E+00
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	∑S(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 130.67 seconds

ATTACHMENT 5

**RESIDENT FARMER SUMMARY REPORT FOR CESIUM-137,
URANIUM-235, URANIUM-235, AND URANIUM-238**

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(1)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(2)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(3)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(4)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(5)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(6)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(7)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(8)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(9)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(10)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(11)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(12)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(13)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(14)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(15)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(16)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(17)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(18)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(19)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(20)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(21)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(22)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(23)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(24)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(25)
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(26)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(27)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(28)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(29)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(30)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(31)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(32)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.104E+00	2.035E+00	DCF2(1)
B-1	Cs-137+D	1.443E-04	1.443E-04	DCF2(2)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(3)
B-1	Pb-210+D	3.697E-02	2.072E-02	DCF2(4)
B-1	Ra-226+D	3.526E-02	3.515E-02	DCF2(5)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(6)
B-1	U-234	3.478E-02	3.478E-02	DCF2(7)
B-1	U-235+D	3.145E-02	3.145E-02	DCF2(8)
B-1	U-238	2.960E-02	2.960E-02	DCF2(9)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(10)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(2)
D-1	Pa-231	2.627E-03	2.627E-03	DCF3(3)

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Pb-210+D	6.998E-03	2.553E-03	DCF3(4)
D-1	Ra-226+D	1.037E-03	1.036E-03	DCF3(5)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(6)
D-1	U-234	1.813E-04	1.813E-04	DCF3(7)
D-1	U-235+D	1.752E-04	1.739E-04	DCF3(8)
D-1	U-238	1.665E-04	1.665E-04	DCF3(9)
D-1	U-238+D	1.791E-04	1.665E-04	DCF3(10)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(2,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(2,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(3,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(7,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(7,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(8,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(8,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(7,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(7,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(8,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(8,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See EFTG table in Ground Pathway of Detailed Report.
 *Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 1 mrem/yr - 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_1MREM-RF-QC.RAD

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(9)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(7)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(8)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(9)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm ³)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm ³)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Cs-137	1.000E+00
Thickness:	0.15 meters	U-234	1.000E+00
Cover Depth:	0.00 meters	U-235	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	3.626E+00	3.560E+00	1.648E+00	9.975E-01	3.959E-01	2.027E-01
M(t):	3.626E+00	3.560E+00	1.648E+00	9.975E-01	3.959E-01	2.027E-01

Maximum TDOSE(t): 3.626E+00 mrem/yr at t = 0.000E+00 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.274E+00	0.6272	5.139E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0110	2.563E-01	0.0707	1.886E-01	0.0520	1.666E-03	0.0005
U-234	2.774E-04	0.0001	1.252E-05	0.0000	0.000E+00	0.0000	9.523E-03	0.0026	9.585E-03	0.0026	4.668E-02	0.0129	6.347E-03	0.0018
U-235	5.381E-01	0.1484	1.133E-05	0.0000	0.000E+00	0.0000	9.206E-03	0.0025	9.280E-03	0.0026	4.509E-02	0.0124	6.133E-03	0.0017
U-238	1.139E-01	0.0314	1.067E-05	0.0000	0.000E+00	0.0000	9.407E-03	0.0026	9.468E-03	0.0026	4.611E-02	0.0127	6.270E-03	0.0017
Total	2.927E+00	0.8071	3.457E-05	0.0000	0.000E+00	0.0000	6.807E-02	0.0188	2.846E-01	0.0785	3.265E-01	0.0900	2.042E-02	0.0056

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.7613
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.242E-02	0.0200
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.1676
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-01	0.0511
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 1 mrem/yr - 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_1MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.221E+00	0.6239	5.020E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0110	2.503E-01	0.0703	1.842E-01	0.0517	1.627E-03	0.0005
U-234	2.769E-04	0.0001	1.250E-05	0.0000	0.000E+00	0.0000	9.507E-03	0.0027	9.568E-03	0.0027	4.659E-02	0.0131	6.336E-03	0.0018
U-235	5.371E-01	0.1509	1.131E-05	0.0000	0.000E+00	0.0000	9.202E-03	0.0026	9.308E-03	0.0026	4.502E-02	0.0126	6.124E-03	0.0017
U-238	1.137E-01	0.0319	1.065E-05	0.0000	0.000E+00	0.0000	9.391E-03	0.0026	9.451E-03	0.0027	4.602E-02	0.0129	6.259E-03	0.0018
Total	2.873E+00	0.8068	3.451E-05	0.0000	0.000E+00	0.0000	6.711E-02	0.0188	2.786E-01	0.0783	3.218E-01	0.0904	2.035E-02	0.0057

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.7574
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-02	0.0203
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.1704
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.849E-01	0.0519
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.560E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 1 mrem/yr - 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_1MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	7.015E-01	0.4256	1.585E-08	0.0000	0.000E+00	0.0000	1.232E-02	0.0075	7.904E-02	0.0480	5.817E-02	0.0353	5.138E-04	0.0003
U-234	2.891E-04	0.0002	1.153E-05	0.0000	0.000E+00	0.0000	8.739E-03	0.0053	8.789E-03	0.0053	4.277E-02	0.0259	5.827E-03	0.0035
U-235	4.939E-01	0.2996	1.096E-05	0.0000	0.000E+00	0.0000	9.113E-03	0.0055	1.064E-02	0.0065	4.134E-02	0.0251	5.793E-03	0.0035
U-238	1.044E-01	0.0633	9.776E-06	0.0000	0.000E+00	0.0000	8.621E-03	0.0052	8.676E-03	0.0053	4.225E-02	0.0256	5.745E-03	0.0035
Total	1.300E+00	0.7887	3.228E-05	0.0000	0.000E+00	0.0000	3.879E-02	0.0235	1.071E-01	0.0650	1.845E-01	0.1119	1.788E-02	0.0108

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.516E-01	0.5166
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.642E-02	0.0403
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.608E-01	0.3402
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.697E-01	0.1029
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.648E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 1 mrem/yr - 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_1MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.164E-01	0.2169	4.890E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0038	2.438E-02	0.0244	1.794E-02	0.0180	1.585E-04	0.0002
U-234	3.654E-04	0.0004	1.062E-05	0.0000	0.000E+00	0.0000	8.037E-03	0.0081	8.067E-03	0.0081	3.919E-02	0.0393	5.353E-03	0.0054
U-235	4.539E-01	0.4550	1.090E-05	0.0000	0.000E+00	0.0000	9.111E-03	0.0091	1.186E-02	0.0119	3.792E-02	0.0380	5.540E-03	0.0056
U-238	9.564E-02	0.0959	8.959E-06	0.0000	0.000E+00	0.0000	7.900E-03	0.0079	7.951E-03	0.0080	3.872E-02	0.0388	5.265E-03	0.0053
Total	7.663E-01	0.7682	3.049E-05	0.0000	0.000E+00	0.0000	2.885E-02	0.0289	5.226E-02	0.0524	1.338E-01	0.1341	1.632E-02	0.0164

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.2633
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.103E-02	0.0612
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.5196
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-01	0.1559
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.975E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.774E-05	0.0000	4.008E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
U-234	2.508E-03	0.0063	5.618E-06	0.0000	0.000E+00	0.0000	4.732E-03	0.0120	4.351E-03	0.0110	1.988E-02	0.0502	2.807E-03	0.0071
U-235	2.342E-01	0.5916	1.074E-05	0.0000	0.000E+00	0.0000	8.969E-03	0.0227	1.790E-02	0.0452	1.909E-02	0.0482	4.154E-03	0.0105
U-238	4.751E-02	0.1200	4.456E-06	0.0000	0.000E+00	0.0000	3.929E-03	0.0099	3.954E-03	0.0100	1.926E-02	0.0486	2.619E-03	0.0066
Total	2.842E-01	0.7179	2.081E-05	0.0001	0.000E+00	0.0000	1.763E-02	0.0445	2.621E-02	0.0662	5.823E-02	0.1471	9.580E-03	0.0242

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0001
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.429E-02	0.0866
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.843E-01	0.7182
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.727E-02	0.1952
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.959E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 1 mrem/yr - 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_1MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.383E-10	0.0000	3.125E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
U-234	6.675E-03	0.0329	2.745E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0187	2.656E-03	0.0131	9.371E-03	0.0462	1.457E-03	0.0072
U-235	1.067E-01	0.5267	1.002E-05	0.0000	0.000E+00	0.0000	8.363E-03	0.0413	1.995E-02	0.0984	8.220E-03	0.0406	3.192E-03	0.0157
U-238	1.982E-02	0.0978	1.862E-06	0.0000	0.000E+00	0.0000	1.642E-03	0.0081	1.652E-03	0.0082	8.043E-03	0.0397	1.094E-03	0.0054
Total	1.332E-01	0.6574	1.463E-05	0.0001	0.000E+00	0.0000	1.379E-02	0.0680	2.426E-02	0.1197	2.563E-02	0.1265	5.743E-03	0.0283

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.395E-02	0.1181
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.7227
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.225E-02	0.1591
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.027E-01	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
 Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
U-234	U-234	1.000E+00	7.242E-02	7.229E-02	6.635E-02	6.078E-02	3.016E-02	1.256E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.917E-03	8.083E-03
U-234	Pb-210+D	1.000E+00	2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.063E-03
U-234	ΣDSR(j)		7.242E-02	7.229E-02	6.642E-02	6.103E-02	3.429E-02	2.395E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.102E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.824E-05	8.889E-05	2.936E-03	5.567E-03	1.908E-02	2.492E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	ΣDSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.843E-01	1.465E-01
U-238	U-238	5.400E-05	3.581E-06	3.575E-06	3.281E-06	3.007E-06	1.494E-06	6.229E-07
U-238+D	U-238+D	9.999E-01	1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02
U-238+D	U-234	9.999E-01	1.026E-07	3.074E-07	9.499E-06	1.732E-05	4.282E-05	3.567E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	3.997E-15	6.056E-14	1.996E-09	1.493E-08	1.226E-06	6.025E-06
U-238+D	Pb-210+D	9.999E-01	1.238E-17	3.507E-16	2.386E-10	2.820E-09	4.143E-07	2.229E-06
U-238+D	ΣDSR(j)		1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.727E-02	3.225E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t=					
	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	3.622E-01	3.708E-01	1.174E+00	3.807E+00	4.645E+04	5.956E+09
U-234	1.381E+01	1.383E+01	1.506E+01	1.639E+01	2.917E+01	4.176E+01
U-235	1.645E+00	1.648E+00	1.783E+00	1.929E+00	3.517E+00	6.827E+00
U-238	5.400E+00	5.410E+00	5.893E+00	6.432E+00	1.294E+01	3.101E+01

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Cs-137	1.000E+00	0.000E+00	2.761E+00	3.622E-01	2.761E+00	3.622E-01
U-234	1.000E+00	0.000E+00	7.242E-02	1.381E+01	7.242E-02	1.381E+01
U-235	1.000E+00	0.000E+00	6.078E-01	1.645E+00	6.078E-01	1.645E+00

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 1 mrem/yr - 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_1MREM-RF-QC.RAD

U-238	1.000E+00	0.000E+00	1.852E-01	5.400E+00	1.852E-01	5.400E+00
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Individual Nuclide Dose Summed Over All Pathways
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
U-234	U-234	1.000E+00	7.242E-02	7.229E-02	6.635E-02	6.078E-02	3.016E-02	1.256E-02
U-234	U-238	9.999E-01	1.026E-07	3.074E-07	9.499E-06	1.732E-05	4.282E-05	3.567E-05
U-234	ΣDOSE (j)		7.242E-02	7.229E-02	6.636E-02	6.080E-02	3.020E-02	1.260E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	ΣDOSE (j)		2.852E-07	8.127E-07	2.535E-05	4.825E-05	1.727E-04	2.407E-04
Ra-226	U-234	1.000E+00	5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.917E-03	8.083E-03
Ra-226	U-238	9.999E-01	3.997E-15	6.056E-14	1.996E-09	1.493E-08	1.226E-06	6.025E-06
Ra-226	ΣDOSE (j)		5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.918E-03	8.089E-03
Pb-210	U-234	1.000E+00	2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.063E-03
Pb-210	U-238	9.999E-01	1.238E-17	3.507E-16	2.386E-10	2.820E-09	4.143E-07	2.229E-06
Pb-210	ΣDOSE (j)		2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.065E-03
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.102E-01	2.535E-01	1.057E-01
Pa-231	U-235	1.000E+00	2.824E-05	8.889E-05	2.936E-03	5.567E-03	1.908E-02	2.492E-02
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-238	U-238	5.400E-05	3.581E-06	3.575E-06	3.281E-06	3.007E-06	1.494E-06	6.229E-07
U-238	U-238	9.999E-01	1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02
U-238	ΣDOSE (j)		1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		0.000E+00	8.994E-06	4.305E-04	8.239E-04	2.961E-03	4.130E-03
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.284E-04	9.110E-04
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.915E-04	8.613E-04
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 8.33 seconds

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(1)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(2)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(3)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(4)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(5)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(6)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(7)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(8)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(9)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(10)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(11)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(12)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(13)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(14)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(15)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(16)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(17)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(18)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(19)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(20)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(21)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(22)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(23)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(24)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(25)
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(26)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(27)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(28)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(29)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(30)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(31)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(32)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.104E+00	2.035E+00	DCF2(1)
B-1	Cs-137+D	1.443E-04	1.443E-04	DCF2(2)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(3)
B-1	Pb-210+D	3.697E-02	2.072E-02	DCF2(4)
B-1	Ra-226+D	3.526E-02	3.515E-02	DCF2(5)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(6)
B-1	U-234	3.478E-02	3.478E-02	DCF2(7)
B-1	U-235+D	3.145E-02	3.145E-02	DCF2(8)
B-1	U-238	2.960E-02	2.960E-02	DCF2(9)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(10)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(2)
D-1	Pa-231	2.627E-03	2.627E-03	DCF3(3)

Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Pb-210+D	6.998E-03	2.553E-03	DCF3(4)
D-1	Ra-226+D	1.037E-03	1.036E-03	DCF3(5)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(6)
D-1	U-234	1.813E-04	1.813E-04	DCF3(7)
D-1	U-235+D	1.752E-04	1.739E-04	DCF3(8)
D-1	U-238	1.665E-04	1.665E-04	DCF3(9)
D-1	U-238+D	1.791E-04	1.665E-04	DCF3(10)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(2,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(2,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(3,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(7,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(7,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(8,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(8,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 15 mrem/yr - 4-Rad

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(7,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(7,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(8,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(8,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 15 mrem/yr - 4-Rad

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(9)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(7)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(8)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(9)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm ³)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm ³)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 15 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Cs-137	1.000E+00
Thickness:	0.15 meters	U-234	1.000E+00
Cover Depth:	0.00 meters	U-235	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	3.626E+00	3.560E+00	1.648E+00	9.975E-01	3.959E-01	2.027E-01
M(t):	2.417E-01	2.374E-01	1.099E-01	6.650E-02	2.639E-02	1.351E-02

Maximum TDOSE(t): 3.626E+00 mrem/yr at t = 0.000E+00 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.274E+00	0.6272	5.139E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0110	2.563E-01	0.0707	1.886E-01	0.0520	1.666E-03	0.0005
U-234	2.774E-04	0.0001	1.252E-05	0.0000	0.000E+00	0.0000	9.523E-03	0.0026	9.585E-03	0.0026	4.668E-02	0.0129	6.347E-03	0.0018
U-235	5.381E-01	0.1484	1.133E-05	0.0000	0.000E+00	0.0000	9.206E-03	0.0025	9.280E-03	0.0026	4.509E-02	0.0124	6.133E-03	0.0017
U-238	1.139E-01	0.0314	1.067E-05	0.0000	0.000E+00	0.0000	9.407E-03	0.0026	9.468E-03	0.0026	4.611E-02	0.0127	6.270E-03	0.0017
Total	2.927E+00	0.8071	3.457E-05	0.0000	0.000E+00	0.0000	6.807E-02	0.0188	2.846E-01	0.0785	3.265E-01	0.0900	2.042E-02	0.0056

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.7613
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.242E-02	0.0200
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.1676
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-01	0.0511
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 15 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.221E+00	0.6239	5.020E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0110	2.503E-01	0.0703	1.842E-01	0.0517	1.627E-03	0.0005
U-234	2.769E-04	0.0001	1.250E-05	0.0000	0.000E+00	0.0000	9.507E-03	0.0027	9.568E-03	0.0027	4.659E-02	0.0131	6.336E-03	0.0018
U-235	5.371E-01	0.1509	1.131E-05	0.0000	0.000E+00	0.0000	9.202E-03	0.0026	9.308E-03	0.0026	4.502E-02	0.0126	6.124E-03	0.0017
U-238	1.137E-01	0.0319	1.065E-05	0.0000	0.000E+00	0.0000	9.391E-03	0.0026	9.451E-03	0.0027	4.602E-02	0.0129	6.259E-03	0.0018
Total	2.873E+00	0.8068	3.451E-05	0.0000	0.000E+00	0.0000	6.711E-02	0.0188	2.786E-01	0.0783	3.218E-01	0.0904	2.035E-02	0.0057

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.7574
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-02	0.0203
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.1704
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.849E-01	0.0519
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.560E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 15 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	7.015E-01	0.4256	1.585E-08	0.0000	0.000E+00	0.0000	1.232E-02	0.0075	7.904E-02	0.0480	5.817E-02	0.0353	5.138E-04	0.0003
U-234	2.891E-04	0.0002	1.153E-05	0.0000	0.000E+00	0.0000	8.739E-03	0.0053	8.789E-03	0.0053	4.277E-02	0.0259	5.827E-03	0.0035
U-235	4.939E-01	0.2996	1.096E-05	0.0000	0.000E+00	0.0000	9.113E-03	0.0055	1.064E-02	0.0065	4.134E-02	0.0251	5.793E-03	0.0035
U-238	1.044E-01	0.0633	9.776E-06	0.0000	0.000E+00	0.0000	8.621E-03	0.0052	8.676E-03	0.0053	4.225E-02	0.0256	5.745E-03	0.0035
Total	1.300E+00	0.7887	3.228E-05	0.0000	0.000E+00	0.0000	3.879E-02	0.0235	1.071E-01	0.0650	1.845E-01	0.1119	1.788E-02	0.0108

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.516E-01	0.5166
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.642E-02	0.0403
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.608E-01	0.3402
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.697E-01	0.1029
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.648E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 15 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.164E-01	0.2169	4.890E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0038	2.438E-02	0.0244	1.794E-02	0.0180	1.585E-04	0.0002
U-234	3.654E-04	0.0004	1.062E-05	0.0000	0.000E+00	0.0000	8.037E-03	0.0081	8.067E-03	0.0081	3.919E-02	0.0393	5.353E-03	0.0054
U-235	4.539E-01	0.4550	1.090E-05	0.0000	0.000E+00	0.0000	9.111E-03	0.0091	1.186E-02	0.0119	3.792E-02	0.0380	5.540E-03	0.0056
U-238	9.564E-02	0.0959	8.959E-06	0.0000	0.000E+00	0.0000	7.900E-03	0.0079	7.951E-03	0.0080	3.872E-02	0.0388	5.265E-03	0.0053
Total	7.663E-01	0.7682	3.049E-05	0.0000	0.000E+00	0.0000	2.885E-02	0.0289	5.226E-02	0.0524	1.338E-01	0.1341	1.632E-02	0.0164

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.2633
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.103E-02	0.0612
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.5196
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-01	0.1559
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.975E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 15 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.774E-05	0.0000	4.008E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
U-234	2.508E-03	0.0063	5.618E-06	0.0000	0.000E+00	0.0000	4.732E-03	0.0120	4.351E-03	0.0110	1.988E-02	0.0502	2.807E-03	0.0071
U-235	2.342E-01	0.5916	1.074E-05	0.0000	0.000E+00	0.0000	8.969E-03	0.0227	1.790E-02	0.0452	1.909E-02	0.0482	4.154E-03	0.0105
U-238	4.751E-02	0.1200	4.456E-06	0.0000	0.000E+00	0.0000	3.929E-03	0.0099	3.954E-03	0.0100	1.926E-02	0.0486	2.619E-03	0.0066
Total	2.842E-01	0.7179	2.081E-05	0.0001	0.000E+00	0.0000	1.763E-02	0.0445	2.621E-02	0.0662	5.823E-02	0.1471	9.580E-03	0.0242

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0001
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.429E-02	0.0866
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.843E-01	0.7182
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.727E-02	0.1952
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.959E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 15 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.383E-10	0.0000	3.125E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
U-234	6.675E-03	0.0329	2.745E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0187	2.656E-03	0.0131	9.371E-03	0.0462	1.457E-03	0.0072
U-235	1.067E-01	0.5267	1.002E-05	0.0000	0.000E+00	0.0000	8.363E-03	0.0413	1.995E-02	0.0984	8.220E-03	0.0406	3.192E-03	0.0157
U-238	1.982E-02	0.0978	1.862E-06	0.0000	0.000E+00	0.0000	1.642E-03	0.0081	1.652E-03	0.0082	8.043E-03	0.0397	1.094E-03	0.0054
Total	1.332E-01	0.6574	1.463E-05	0.0001	0.000E+00	0.0000	1.379E-02	0.0680	2.426E-02	0.1197	2.563E-02	0.1265	5.743E-03	0.0283

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.395E-02	0.1181
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.7227
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.225E-02	0.1591
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.027E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 15 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
U-234	U-234	1.000E+00	7.242E-02	7.229E-02	6.635E-02	6.078E-02	3.016E-02	1.256E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.917E-03	8.083E-03
U-234	Pb-210+D	1.000E+00	2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.063E-03
U-234	∑DSR(j)		7.242E-02	7.229E-02	6.642E-02	6.103E-02	3.429E-02	2.395E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.102E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.824E-05	8.889E-05	2.936E-03	5.567E-03	1.908E-02	2.492E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.843E-01	1.465E-01
U-238	U-238	5.400E-05	3.581E-06	3.575E-06	3.281E-06	3.007E-06	1.494E-06	6.229E-07
U-238+D	U-238+D	9.999E-01	1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02
U-238+D	U-234	9.999E-01	1.026E-07	3.074E-07	9.499E-06	1.732E-05	4.282E-05	3.567E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	3.997E-15	6.056E-14	1.996E-09	1.493E-08	1.226E-06	6.025E-06
U-238+D	Pb-210+D	9.999E-01	1.238E-17	3.507E-16	2.386E-10	2.820E-09	4.143E-07	2.229E-06
U-238+D	∑DSR(j)		1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.727E-02	3.225E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t=					
	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	5.433E+00	5.563E+00	1.761E+01	5.710E+01	6.967E+05	8.934E+10
U-234	2.071E+02	2.075E+02	2.258E+02	2.458E+02	4.375E+02	6.264E+02
U-235	2.468E+01	2.472E+01	2.675E+01	2.894E+01	5.276E+01	1.024E+02
U-238	8.100E+01	8.114E+01	8.840E+01	9.648E+01	1.941E+02	4.651E+02

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,t) in (mrem/yr)/(pCi/g)			
			DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
Cs-137	1.000E+00	0.000E+00	2.761E+00	5.433E+00	2.761E+00	5.433E+00
U-234	1.000E+00	0.000E+00	7.242E-02	2.071E+02	7.242E-02	2.071E+02
U-235	1.000E+00	0.000E+00	6.078E-01	2.468E+01	6.078E-01	2.468E+01

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 15 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_15MREM-RF-QC.RAD

U-238	1.000E+00	0.000E+00	1.852E-01	8.100E+01	1.852E-01	8.100E+01
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Individual Nuclide Dose Summed Over All Pathways
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
U-234	U-234	1.000E+00	7.242E-02	7.229E-02	6.635E-02	6.078E-02	3.016E-02	1.256E-02
U-234	U-238	9.999E-01	1.026E-07	3.074E-07	9.499E-06	1.732E-05	4.282E-05	3.567E-05
U-234	ΣDOSE (j)		7.242E-02	7.229E-02	6.636E-02	6.080E-02	3.020E-02	1.260E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	ΣDOSE (j)		2.852E-07	8.127E-07	2.535E-05	4.825E-05	1.727E-04	2.407E-04
Ra-226	U-234	1.000E+00	5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.917E-03	8.083E-03
Ra-226	U-238	9.999E-01	3.997E-15	6.056E-14	1.996E-09	1.493E-08	1.226E-06	6.025E-06
Ra-226	ΣDOSE (j)		5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.918E-03	8.089E-03
Pb-210	U-234	1.000E+00	2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.063E-03
Pb-210	U-238	9.999E-01	1.238E-17	3.507E-16	2.386E-10	2.820E-09	4.143E-07	2.229E-06
Pb-210	ΣDOSE (j)		2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.065E-03
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.102E-01	2.535E-01	1.057E-01
Pa-231	U-235	1.000E+00	2.824E-05	8.889E-05	2.936E-03	5.567E-03	1.908E-02	2.492E-02
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-238	U-238	5.400E-05	3.581E-06	3.575E-06	3.281E-06	3.007E-06	1.494E-06	6.229E-07
U-238	U-238	9.999E-01	1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02
U-238	ΣDOSE (j)		1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		0.000E+00	8.994E-06	4.305E-04	8.239E-04	2.961E-03	4.130E-03
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.284E-04	9.110E-04
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.915E-04	8.613E-04
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 8.28 seconds

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(1)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(2)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(3)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(4)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(5)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(6)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(7)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(8)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(9)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(10)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(11)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(12)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(13)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(14)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(15)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(16)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(17)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(18)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(19)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(20)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(21)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(22)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(23)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(24)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(25)
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(26)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(27)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(28)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(29)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(30)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(31)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(32)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.104E+00	2.035E+00	DCF2(1)
B-1	Cs-137+D	1.443E-04	1.443E-04	DCF2(2)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(3)
B-1	Pb-210+D	3.697E-02	2.072E-02	DCF2(4)
B-1	Ra-226+D	3.526E-02	3.515E-02	DCF2(5)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(6)
B-1	U-234	3.478E-02	3.478E-02	DCF2(7)
B-1	U-235+D	3.145E-02	3.145E-02	DCF2(8)
B-1	U-238	2.960E-02	2.960E-02	DCF2(9)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(10)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(2)
D-1	Pa-231	2.627E-03	2.627E-03	DCF3(3)

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Pb-210+D	6.998E-03	2.553E-03	DCF3(4)
D-1	Ra-226+D	1.037E-03	1.036E-03	DCF3(5)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(6)
D-1	U-234	1.813E-04	1.813E-04	DCF3(7)
D-1	U-235+D	1.752E-04	1.739E-04	DCF3(8)
D-1	U-238	1.665E-04	1.665E-04	DCF3(9)
D-1	U-238+D	1.791E-04	1.665E-04	DCF3(10)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(2,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(2,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(3,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(7,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(7,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(8,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(8,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(7,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(7,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(8,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(8,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See EFTG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(9)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(7)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(8)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(9)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm ³)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm ³)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Cs-137	1.000E+00
Thickness:	0.15 meters	U-234	1.000E+00
Cover Depth:	0.00 meters	U-235	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	3.626E+00	3.560E+00	1.648E+00	9.975E-01	3.959E-01	2.027E-01
M(t):	1.450E-01	1.424E-01	6.594E-02	3.990E-02	1.584E-02	8.107E-03

Maximum TDOSE(t): 3.626E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.274E+00	0.6272	5.139E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0110	2.563E-01	0.0707	1.886E-01	0.0520	1.666E-03	0.0005
U-234	2.774E-04	0.0001	1.252E-05	0.0000	0.000E+00	0.0000	9.523E-03	0.0026	9.585E-03	0.0026	4.668E-02	0.0129	6.347E-03	0.0018
U-235	5.381E-01	0.1484	1.133E-05	0.0000	0.000E+00	0.0000	9.206E-03	0.0025	9.280E-03	0.0026	4.509E-02	0.0124	6.133E-03	0.0017
U-238	1.139E-01	0.0314	1.067E-05	0.0000	0.000E+00	0.0000	9.407E-03	0.0026	9.468E-03	0.0026	4.611E-02	0.0127	6.270E-03	0.0017
Total	2.927E+00	0.8071	3.457E-05	0.0000	0.000E+00	0.0000	6.807E-02	0.0188	2.846E-01	0.0785	3.265E-01	0.0900	2.042E-02	0.0056

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.7613
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.242E-02	0.0200
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.1676
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-01	0.0511
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.221E+00	0.6239	5.020E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0110	2.503E-01	0.0703	1.842E-01	0.0517	1.627E-03	0.0005
U-234	2.769E-04	0.0001	1.250E-05	0.0000	0.000E+00	0.0000	9.507E-03	0.0027	9.568E-03	0.0027	4.659E-02	0.0131	6.336E-03	0.0018
U-235	5.371E-01	0.1509	1.131E-05	0.0000	0.000E+00	0.0000	9.202E-03	0.0026	9.308E-03	0.0026	4.502E-02	0.0126	6.124E-03	0.0017
U-238	1.137E-01	0.0319	1.065E-05	0.0000	0.000E+00	0.0000	9.391E-03	0.0026	9.451E-03	0.0027	4.602E-02	0.0129	6.259E-03	0.0018
Total	2.873E+00	0.8068	3.451E-05	0.0000	0.000E+00	0.0000	6.711E-02	0.0188	2.786E-01	0.0783	3.218E-01	0.0904	2.035E-02	0.0057

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.7574
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-02	0.0203
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.1704
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.849E-01	0.0519
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.560E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	7.015E-01	0.4256	1.585E-08	0.0000	0.000E+00	0.0000	1.232E-02	0.0075	7.904E-02	0.0480	5.817E-02	0.0353	5.138E-04	0.0003
U-234	2.891E-04	0.0002	1.153E-05	0.0000	0.000E+00	0.0000	8.739E-03	0.0053	8.789E-03	0.0053	4.277E-02	0.0259	5.827E-03	0.0035
U-235	4.939E-01	0.2996	1.096E-05	0.0000	0.000E+00	0.0000	9.113E-03	0.0055	1.064E-02	0.0065	4.134E-02	0.0251	5.793E-03	0.0035
U-238	1.044E-01	0.0633	9.776E-06	0.0000	0.000E+00	0.0000	8.621E-03	0.0052	8.676E-03	0.0053	4.225E-02	0.0256	5.745E-03	0.0035
Total	1.300E+00	0.7887	3.228E-05	0.0000	0.000E+00	0.0000	3.879E-02	0.0235	1.071E-01	0.0650	1.845E-01	0.1119	1.788E-02	0.0108

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.516E-01	0.5166
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.642E-02	0.0403
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.608E-01	0.3402
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.697E-01	0.1029
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.648E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.164E-01	0.2169	4.890E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0038	2.438E-02	0.0244	1.794E-02	0.0180	1.585E-04	0.0002
U-234	3.654E-04	0.0004	1.062E-05	0.0000	0.000E+00	0.0000	8.037E-03	0.0081	8.067E-03	0.0081	3.919E-02	0.0393	5.353E-03	0.0054
U-235	4.539E-01	0.4550	1.090E-05	0.0000	0.000E+00	0.0000	9.111E-03	0.0091	1.186E-02	0.0119	3.792E-02	0.0380	5.540E-03	0.0056
U-238	9.564E-02	0.0959	8.959E-06	0.0000	0.000E+00	0.0000	7.900E-03	0.0079	7.951E-03	0.0080	3.872E-02	0.0388	5.265E-03	0.0053
Total	7.663E-01	0.7682	3.049E-05	0.0000	0.000E+00	0.0000	2.885E-02	0.0289	5.226E-02	0.0524	1.338E-01	0.1341	1.632E-02	0.0164

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.2633
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.103E-02	0.0612
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.5196
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-01	0.1559
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.975E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.774E-05	0.0000	4.008E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
U-234	2.508E-03	0.0063	5.618E-06	0.0000	0.000E+00	0.0000	4.732E-03	0.0120	4.351E-03	0.0110	1.988E-02	0.0502	2.807E-03	0.0071
U-235	2.342E-01	0.5916	1.074E-05	0.0000	0.000E+00	0.0000	8.969E-03	0.0227	1.790E-02	0.0452	1.909E-02	0.0482	4.154E-03	0.0105
U-238	4.751E-02	0.1200	4.456E-06	0.0000	0.000E+00	0.0000	3.929E-03	0.0099	3.954E-03	0.0100	1.926E-02	0.0486	2.619E-03	0.0066
Total	2.842E-01	0.7179	2.081E-05	0.0001	0.000E+00	0.0000	1.763E-02	0.0445	2.621E-02	0.0662	5.823E-02	0.1471	9.580E-03	0.0242

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0001
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.429E-02	0.0866
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.843E-01	0.7182
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.727E-02	0.1952
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.959E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_25MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.383E-10	0.0000	3.125E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
U-234	6.675E-03	0.0329	2.745E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0187	2.656E-03	0.0131	9.371E-03	0.0462	1.457E-03	0.0072
U-235	1.067E-01	0.5267	1.002E-05	0.0000	0.000E+00	0.0000	8.363E-03	0.0413	1.995E-02	0.0984	8.220E-03	0.0406	3.192E-03	0.0157
U-238	1.982E-02	0.0978	1.862E-06	0.0000	0.000E+00	0.0000	1.642E-03	0.0081	1.652E-03	0.0082	8.043E-03	0.0397	1.094E-03	0.0054
Total	1.332E-01	0.6574	1.463E-05	0.0001	0.000E+00	0.0000	1.379E-02	0.0680	2.426E-02	0.1197	2.563E-02	0.1265	5.743E-03	0.0283

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.395E-02	0.1181
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.7227
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.225E-02	0.1591
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.027E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
U-234	U-234	1.000E+00	7.242E-02	7.229E-02	6.635E-02	6.078E-02	3.016E-02	1.256E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.917E-03	8.083E-03
U-234	Pb-210+D	1.000E+00	2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.063E-03
U-234	∑DSR(j)		7.242E-02	7.229E-02	6.642E-02	6.103E-02	3.429E-02	2.395E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.102E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.824E-05	8.889E-05	2.936E-03	5.567E-03	1.908E-02	2.492E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.843E-01	1.465E-01
U-238	U-238	5.400E-05	3.581E-06	3.575E-06	3.281E-06	3.007E-06	1.494E-06	6.229E-07
U-238+D	U-238+D	9.999E-01	1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02
U-238+D	U-234	9.999E-01	1.026E-07	3.074E-07	9.499E-06	1.732E-05	4.282E-05	3.567E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	3.997E-15	6.056E-14	1.996E-09	1.493E-08	1.226E-06	6.025E-06
U-238+D	Pb-210+D	9.999E-01	1.238E-17	3.507E-16	2.386E-10	2.820E-09	4.143E-07	2.229E-06
U-238+D	∑DSR(j)		1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.727E-02	3.225E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t =					
	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	9.056E+00	9.271E+00	2.936E+01	9.517E+01	1.161E+06	1.489E+11
U-234	3.452E+02	3.458E+02	3.764E+02	4.097E+02	7.291E+02	1.044E+03
U-235	4.113E+01	4.120E+01	4.458E+01	4.823E+01	8.793E+01	1.707E+02
U-238	1.350E+02	1.352E+02	1.473E+02	1.608E+02	3.235E+02	7.751E+02

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,t) in (mrem/yr)/(pCi/g)			
			DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
Cs-137	1.000E+00	0.000E+00	2.761E+00	9.056E+00	2.761E+00	9.056E+00
U-234	1.000E+00	0.000E+00	7.242E-02	3.452E+02	7.242E-02	3.452E+02
U-235	1.000E+00	0.000E+00	6.078E-01	4.113E+01	6.078E-01	4.113E+01

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 25 mrem/yr - 4-Rad

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U-238	1.000E+00	0.000E+00	1.852E-01	1.350E+02	1.852E-01	1.350E+02
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Individual Nuclide Dose Summed Over All Pathways
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
U-234	U-234	1.000E+00	7.242E-02	7.229E-02	6.635E-02	6.078E-02	3.016E-02	1.256E-02
U-234	U-238	9.999E-01	1.026E-07	3.074E-07	9.499E-06	1.732E-05	4.282E-05	3.567E-05
U-234	ΣDOSE (j)		7.242E-02	7.229E-02	6.636E-02	6.080E-02	3.020E-02	1.260E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	ΣDOSE (j)		2.852E-07	8.127E-07	2.535E-05	4.825E-05	1.727E-04	2.407E-04
Ra-226	U-234	1.000E+00	5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.917E-03	8.083E-03
Ra-226	U-238	9.999E-01	3.997E-15	6.056E-14	1.996E-09	1.493E-08	1.226E-06	6.025E-06
Ra-226	ΣDOSE (j)		5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.918E-03	8.089E-03
Pb-210	U-234	1.000E+00	2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.063E-03
Pb-210	U-238	9.999E-01	1.238E-17	3.507E-16	2.386E-10	2.820E-09	4.143E-07	2.229E-06
Pb-210	ΣDOSE (j)		2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.065E-03
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.102E-01	2.535E-01	1.057E-01
Pa-231	U-235	1.000E+00	2.824E-05	8.889E-05	2.936E-03	5.567E-03	1.908E-02	2.492E-02
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-238	U-238	5.400E-05	3.581E-06	3.575E-06	3.281E-06	3.007E-06	1.494E-06	6.229E-07
U-238	U-238	9.999E-01	1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02
U-238	ΣDOSE (j)		1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		0.000E+00	8.994E-06	4.305E-04	8.239E-04	2.961E-03	4.130E-03
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.284E-04	9.110E-04
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.915E-04	8.613E-04
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 8.19 seconds

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(1)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(2)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(3)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(4)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(5)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(6)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(7)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(8)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(9)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(10)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(11)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(12)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(13)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(14)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(15)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(16)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(17)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(18)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(19)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(20)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(21)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(22)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(23)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(24)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(25)
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(26)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(27)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(28)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(29)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(30)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(31)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(32)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.104E+00	2.035E+00	DCF2(1)
B-1	Cs-137+D	1.443E-04	1.443E-04	DCF2(2)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(3)
B-1	Pb-210+D	3.697E-02	2.072E-02	DCF2(4)
B-1	Ra-226+D	3.526E-02	3.515E-02	DCF2(5)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(6)
B-1	U-234	3.478E-02	3.478E-02	DCF2(7)
B-1	U-235+D	3.145E-02	3.145E-02	DCF2(8)
B-1	U-238	2.960E-02	2.960E-02	DCF2(9)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(10)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(2)
D-1	Pa-231	2.627E-03	2.627E-03	DCF3(3)

Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Pb-210+D	6.998E-03	2.553E-03	DCF3(4)
D-1	Ra-226+D	1.037E-03	1.036E-03	DCF3(5)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(6)
D-1	U-234	1.813E-04	1.813E-04	DCF3(7)
D-1	U-235+D	1.752E-04	1.739E-04	DCF3(8)
D-1	U-238	1.665E-04	1.665E-04	DCF3(9)
D-1	U-238+D	1.791E-04	1.665E-04	DCF3(10)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(2,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(2,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(3,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(7,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(7,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(8,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(8,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 100 mrem/yr - 4-Ra

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(7,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(7,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(8,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(8,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See EFTG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 100 mrem/yr - 4-Ra

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+02	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(9)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(7)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(8)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(9)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 100 mrem/yr - 4-Ra

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm ³)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm ³)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 100 mrem/yr - 4-Ra

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	20000.00 square meters	Cs-137	1.000E+00
Thickness:	0.15 meters	U-234	1.000E+00
Cover Depth:	0.00 meters	U-235	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	3.626E+00	3.560E+00	1.648E+00	9.975E-01	3.959E-01	2.027E-01
M(t):	3.626E-02	3.560E-02	1.648E-02	9.975E-03	3.959E-03	2.027E-03

Maximum TDOSE(t): 3.626E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 100 mrem/yr - 4-Ra

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.274E+00	0.6272	5.139E-08	0.0000	0.000E+00	0.0000	3.994E-02	0.0110	2.563E-01	0.0707	1.886E-01	0.0520	1.666E-03	0.0005
U-234	2.774E-04	0.0001	1.252E-05	0.0000	0.000E+00	0.0000	9.523E-03	0.0026	9.585E-03	0.0026	4.668E-02	0.0129	6.347E-03	0.0018
U-235	5.381E-01	0.1484	1.133E-05	0.0000	0.000E+00	0.0000	9.206E-03	0.0025	9.280E-03	0.0026	4.509E-02	0.0124	6.133E-03	0.0017
U-238	1.139E-01	0.0314	1.067E-05	0.0000	0.000E+00	0.0000	9.407E-03	0.0026	9.468E-03	0.0026	4.611E-02	0.0127	6.270E-03	0.0017
Total	2.927E+00	0.8071	3.457E-05	0.0000	0.000E+00	0.0000	6.807E-02	0.0188	2.846E-01	0.0785	3.265E-01	0.0900	2.042E-02	0.0056

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	0.7613
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.242E-02	0.0200
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.078E-01	0.1676
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-01	0.0511
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.626E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 100 mrem/yr - 4-Ra

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_100MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.221E+00	0.6239	5.020E-08	0.0000	0.000E+00	0.0000	3.901E-02	0.0110	2.503E-01	0.0703	1.842E-01	0.0517	1.627E-03	0.0005
U-234	2.769E-04	0.0001	1.250E-05	0.0000	0.000E+00	0.0000	9.507E-03	0.0027	9.568E-03	0.0027	4.659E-02	0.0131	6.336E-03	0.0018
U-235	5.371E-01	0.1509	1.131E-05	0.0000	0.000E+00	0.0000	9.202E-03	0.0026	9.308E-03	0.0026	4.502E-02	0.0126	6.124E-03	0.0017
U-238	1.137E-01	0.0319	1.065E-05	0.0000	0.000E+00	0.0000	9.391E-03	0.0026	9.451E-03	0.0027	4.602E-02	0.0129	6.259E-03	0.0018
Total	2.873E+00	0.8068	3.451E-05	0.0000	0.000E+00	0.0000	6.711E-02	0.0188	2.786E-01	0.0783	3.218E-01	0.0904	2.035E-02	0.0057

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E+00	0.7574
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.229E-02	0.0203
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.068E-01	0.1704
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.849E-01	0.0519
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.560E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 100 mrem/yr - 4-Ra

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_100MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	7.015E-01	0.4256	1.585E-08	0.0000	0.000E+00	0.0000	1.232E-02	0.0075	7.904E-02	0.0480	5.817E-02	0.0353	5.138E-04	0.0003
U-234	2.891E-04	0.0002	1.153E-05	0.0000	0.000E+00	0.0000	8.739E-03	0.0053	8.789E-03	0.0053	4.277E-02	0.0259	5.827E-03	0.0035
U-235	4.939E-01	0.2996	1.096E-05	0.0000	0.000E+00	0.0000	9.113E-03	0.0055	1.064E-02	0.0065	4.134E-02	0.0251	5.793E-03	0.0035
U-238	1.044E-01	0.0633	9.776E-06	0.0000	0.000E+00	0.0000	8.621E-03	0.0052	8.676E-03	0.0053	4.225E-02	0.0256	5.745E-03	0.0035
Total	1.300E+00	0.7887	3.228E-05	0.0000	0.000E+00	0.0000	3.879E-02	0.0235	1.071E-01	0.0650	1.845E-01	0.1119	1.788E-02	0.0108

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.516E-01	0.5166
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.642E-02	0.0403
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.608E-01	0.3402
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.697E-01	0.1029
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.648E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 100 mrem/yr - 4-Ra

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_100MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.164E-01	0.2169	4.890E-09	0.0000	0.000E+00	0.0000	3.800E-03	0.0038	2.438E-02	0.0244	1.794E-02	0.0180	1.585E-04	0.0002
U-234	3.654E-04	0.0004	1.062E-05	0.0000	0.000E+00	0.0000	8.037E-03	0.0081	8.067E-03	0.0081	3.919E-02	0.0393	5.353E-03	0.0054
U-235	4.539E-01	0.4550	1.090E-05	0.0000	0.000E+00	0.0000	9.111E-03	0.0091	1.186E-02	0.0119	3.792E-02	0.0380	5.540E-03	0.0056
U-238	9.564E-02	0.0959	8.959E-06	0.0000	0.000E+00	0.0000	7.900E-03	0.0079	7.951E-03	0.0080	3.872E-02	0.0388	5.265E-03	0.0053
Total	7.663E-01	0.7682	3.049E-05	0.0000	0.000E+00	0.0000	2.885E-02	0.0289	5.226E-02	0.0524	1.338E-01	0.1341	1.632E-02	0.0164

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.627E-01	0.2633
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.103E-02	0.0612
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-01	0.5196
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-01	0.1559
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.975E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 100 mrem/yr - 4-Ra

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_100MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.774E-05	0.0000	4.008E-13	0.0000	0.000E+00	0.0000	3.114E-07	0.0000	1.998E-06	0.0000	1.471E-06	0.0000	1.299E-08	0.0000
U-234	2.508E-03	0.0063	5.618E-06	0.0000	0.000E+00	0.0000	4.732E-03	0.0120	4.351E-03	0.0110	1.988E-02	0.0502	2.807E-03	0.0071
U-235	2.342E-01	0.5916	1.074E-05	0.0000	0.000E+00	0.0000	8.969E-03	0.0227	1.790E-02	0.0452	1.909E-02	0.0482	4.154E-03	0.0105
U-238	4.751E-02	0.1200	4.456E-06	0.0000	0.000E+00	0.0000	3.929E-03	0.0099	3.954E-03	0.0100	1.926E-02	0.0486	2.619E-03	0.0066
Total	2.842E-01	0.7179	2.081E-05	0.0001	0.000E+00	0.0000	1.763E-02	0.0445	2.621E-02	0.0662	5.823E-02	0.1471	9.580E-03	0.0242

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E-05	0.0001
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.429E-02	0.0866
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.843E-01	0.7182
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.727E-02	0.1952
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.959E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 100 mrem/yr - 4-Ra

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_AL_OUTSIDE-LA_FEB2011_100MREM-RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.383E-10	0.0000	3.125E-18	0.0000	0.000E+00	0.0000	2.429E-12	0.0000	1.558E-11	0.0000	1.147E-11	0.0000	1.013E-13	0.0000
U-234	6.675E-03	0.0329	2.745E-06	0.0000	0.000E+00	0.0000	3.783E-03	0.0187	2.656E-03	0.0131	9.371E-03	0.0462	1.457E-03	0.0072
U-235	1.067E-01	0.5267	1.002E-05	0.0000	0.000E+00	0.0000	8.363E-03	0.0413	1.995E-02	0.0984	8.220E-03	0.0406	3.192E-03	0.0157
U-238	1.982E-02	0.0978	1.862E-06	0.0000	0.000E+00	0.0000	1.642E-03	0.0081	1.652E-03	0.0082	8.043E-03	0.0397	1.094E-03	0.0054
Total	1.332E-01	0.6574	1.463E-05	0.0001	0.000E+00	0.0000	1.379E-02	0.0680	2.426E-02	0.1197	2.563E-02	0.1265	5.743E-03	0.0283

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-10	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.395E-02	0.1181
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.465E-01	0.7227
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.225E-02	0.1591
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.027E-01	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
 Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
U-234	U-234	1.000E+00	7.242E-02	7.229E-02	6.635E-02	6.078E-02	3.016E-02	1.256E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.917E-03	8.083E-03
U-234	Pb-210+D	1.000E+00	2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.063E-03
U-234	ΣDSR(j)		7.242E-02	7.229E-02	6.642E-02	6.103E-02	3.429E-02	2.395E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.102E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.824E-05	8.889E-05	2.936E-03	5.567E-03	1.908E-02	2.492E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	ΣDSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.843E-01	1.465E-01
U-238	U-238	5.400E-05	3.581E-06	3.575E-06	3.281E-06	3.007E-06	1.494E-06	6.229E-07
U-238+D	U-238+D	9.999E-01	1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02
U-238+D	U-234	9.999E-01	1.026E-07	3.074E-07	9.499E-06	1.732E-05	4.282E-05	3.567E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	3.997E-15	6.056E-14	1.996E-09	1.493E-08	1.226E-06	6.025E-06
U-238+D	Pb-210+D	9.999E-01	1.238E-17	3.507E-16	2.386E-10	2.820E-09	4.143E-07	2.229E-06
U-238+D	ΣDSR(j)		1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.727E-02	3.225E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 Basic Radiation Dose Limit = 1.000E+02 mrem/yr

Nuclide (i)	t=					
	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	3.622E+01	3.708E+01	1.174E+02	3.807E+02	4.645E+06	5.956E+11
U-234	1.381E+03	1.383E+03	1.506E+03	1.639E+03	2.917E+03	4.176E+03
U-235	1.645E+02	1.648E+02	1.783E+02	1.929E+02	3.517E+02	6.827E+02
U-238	5.400E+02	5.410E+02	5.893E+02	6.432E+02	1.294E+03	3.101E+03

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Cs-137	1.000E+00	0.000E+00	2.761E+00	3.622E+01	2.761E+00	3.622E+01
U-234	1.000E+00	0.000E+00	7.242E-02	1.381E+03	7.242E-02	1.381E+03
U-235	1.000E+00	0.000E+00	6.078E-01	1.645E+02	6.078E-01	1.645E+02

Summary : RESRAD Parameters for Resident Farmer Outside Limited Area - 100 mrem/yr - 4-Ra

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U-238	1.000E+00	0.000E+00	1.852E-01	5.400E+02	1.852E-01	5.400E+02
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Individual Nuclide Dose Summed Over All Pathways
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
U-234	U-234	1.000E+00	7.242E-02	7.229E-02	6.635E-02	6.078E-02	3.016E-02	1.256E-02
U-234	U-238	9.999E-01	1.026E-07	3.074E-07	9.499E-06	1.732E-05	4.282E-05	3.567E-05
U-234	ΣDOSE (j)		7.242E-02	7.229E-02	6.636E-02	6.080E-02	3.020E-02	1.260E-02
Th-230	U-234	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
Th-230	U-238	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
Th-230	ΣDOSE (j)		2.852E-07	8.127E-07	2.535E-05	4.825E-05	1.727E-04	2.407E-04
Ra-226	U-234	1.000E+00	5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.917E-03	8.083E-03
Ra-226	U-238	9.999E-01	3.997E-15	6.056E-14	1.996E-09	1.493E-08	1.226E-06	6.025E-06
Ra-226	ΣDOSE (j)		5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.918E-03	8.089E-03
Pb-210	U-234	1.000E+00	2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.063E-03
Pb-210	U-238	9.999E-01	1.238E-17	3.507E-16	2.386E-10	2.820E-09	4.143E-07	2.229E-06
Pb-210	ΣDOSE (j)		2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.065E-03
U-235	U-235	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.102E-01	2.535E-01	1.057E-01
Pa-231	U-235	1.000E+00	2.824E-05	8.889E-05	2.936E-03	5.567E-03	1.908E-02	2.492E-02
Ac-227	U-235	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-238	U-238	5.400E-05	3.581E-06	3.575E-06	3.281E-06	3.007E-06	1.494E-06	6.229E-07
U-238	U-238	9.999E-01	1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02
U-238	ΣDOSE (j)		1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
 Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.000E+00	9.768E-01	3.085E-01	9.515E-02	7.798E-06	6.081E-11
U-234	U-234	1.000E+00	1.000E+00	9.982E-01	9.161E-01	8.393E-01	4.165E-01	1.734E-01
U-234	U-238	9.999E-01	0.000E+00	2.830E-06	1.299E-04	2.380E-04	5.907E-04	4.924E-04
U-234	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
Th-230	U-234	1.000E+00	0.000E+00	8.994E-06	4.304E-04	8.238E-04	2.960E-03	4.125E-03
Th-230	U-238	9.999E-01	0.000E+00	1.274E-11	3.007E-08	1.135E-07	1.804E-06	4.263E-06
Th-230	ΣS(j):		0.000E+00	8.994E-06	4.305E-04	8.239E-04	2.961E-03	4.130E-03
Ra-226	U-234	1.000E+00	0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.282E-04	9.103E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.841E-15	2.185E-10	1.659E-09	1.378E-07	6.783E-07
Ra-226	ΣS(j):		0.000E+00	1.948E-09	4.679E-06	1.797E-05	3.284E-04	9.110E-04
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.914E-04	8.607E-04
Pb-210	U-238	9.999E-01	0.000E+00	1.422E-17	6.441E-11	7.780E-10	1.162E-07	6.263E-07
Pb-210	ΣS(j):		0.000E+00	2.003E-11	1.720E-06	1.002E-05	2.915E-04	8.613E-04
U-235	U-235	1.000E+00	1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01
Pa-231	U-235	1.000E+00	0.000E+00	2.114E-05	1.007E-03	1.918E-03	6.599E-03	8.621E-03
Ac-227	U-235	1.000E+00	0.000E+00	3.330E-07	5.078E-04	1.360E-03	6.303E-03	8.493E-03
U-238	U-238	5.400E-05	5.400E-05	5.391E-05	4.948E-05	4.533E-05	2.252E-05	9.392E-06
U-238	U-238	9.999E-01	9.999E-01	9.982E-01	9.162E-01	8.395E-01	4.170E-01	1.739E-01
U-238	ΣS(j):		1.000E+00	9.983E-01	9.163E-01	8.395E-01	4.170E-01	1.739E-01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 8.53 seconds

ATTACHMENT 6

**RESIDENT FARMER, TEEN RECREATIONAL USER, AND
WILDLIFE WORKER PEAK DOSE SUMMARY REPORT FOR
CESIUM-137, URANIUM-234, URANIUM-235, AND URANIUM-238**

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

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Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(1)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(2)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(3)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(4)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(5)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(6)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(7)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(8)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(9)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(10)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(11)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(12)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(13)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(14)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(15)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(16)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(17)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(18)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(19)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(20)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(21)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(22)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(23)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(24)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(25)
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(26)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(27)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(28)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(29)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(30)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(31)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(32)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.104E+00	2.035E+00	DCF2(1)
B-1	Cs-137+D	1.443E-04	1.443E-04	DCF2(2)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(3)
B-1	Pb-210+D	3.697E-02	2.072E-02	DCF2(4)
B-1	Ra-226+D	3.526E-02	3.515E-02	DCF2(5)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(6)
B-1	U-234	3.478E-02	3.478E-02	DCF2(7)
B-1	U-235+D	3.145E-02	3.145E-02	DCF2(8)
B-1	U-238	2.960E-02	2.960E-02	DCF2(9)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(10)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(2)
D-1	Pa-231	2.627E-03	2.627E-03	DCF3(3)

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Pb-210+D	6.998E-03	2.553E-03	DCF3(4)
D-1	Ra-226+D	1.037E-03	1.036E-03	DCF3(5)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(6)
D-1	U-234	1.813E-04	1.813E-04	DCF3(7)
D-1	U-235+D	1.752E-04	1.739E-04	DCF3(8)
D-1	U-238	1.665E-04	1.665E-04	DCF3(9)
D-1	U-238+D	1.791E-04	1.665E-04	DCF3(10)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(2,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(2,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(3,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(7,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(7,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(8,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(8,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(7,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(7,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(8,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(8,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.414E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	9.100E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): U-234	3.500E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	4.100E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	1.300E+02	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(9)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.670E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.400E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	4.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.894E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.010E-03	2.000E-02	---	HGWT

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.220E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.460E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(7)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(8)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(9)
R016	Unsat. zone 1 (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	7.297E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.400E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.400E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	2.317E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.030E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	4.250E+02	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	1.540E+02	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.500E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	2.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	1.000E+00	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	0.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm ³)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm ³)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS

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TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 20000.00 square meters	Cs-137	9.100E+00
Thickness: 0.15 meters	U-234	3.500E+02
Cover Depth: 0.00 meters	U-235	4.100E+01
	U-238	1.300E+02

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	9.946E+01	9.875E+01	7.605E+01	6.522E+01	3.370E+01	1.858E+01
M(t):	9.946E+01	9.875E+01	7.605E+01	6.522E+01	3.370E+01	1.858E+01

Maximum TDOSE(t): 9.946E+01 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.070E+01	0.2081	4.677E-07	0.0000	0.000E+00	0.0000	3.634E-01	0.0037	2.332E+00	0.0234	1.716E+00	0.0173	1.516E-02	0.0002
U-234	9.708E-02	0.0010	4.383E-03	0.0000	0.000E+00	0.0000	3.333E+00	0.0335	3.355E+00	0.0337	1.634E+01	0.1642	2.222E+00	0.0223
U-235	2.206E+01	0.2218	4.644E-04	0.0000	0.000E+00	0.0000	3.775E-01	0.0038	3.805E-01	0.0038	1.849E+00	0.0186	2.515E-01	0.0025
U-238	1.481E+01	0.1489	1.387E-03	0.0000	0.000E+00	0.0000	1.223E+00	0.0123	1.231E+00	0.0124	5.994E+00	0.0603	8.151E-01	0.0082
Total	5.766E+01	0.5797	6.235E-03	0.0001	0.000E+00	0.0000	5.297E+00	0.0533	7.298E+00	0.0734	2.589E+01	0.2603	3.303E+00	0.0332

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.512E+01	0.2526
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.535E+01	0.2548
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.492E+01	0.2505
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.407E+01	0.2420
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.946E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.021E+01	0.2047	4.568E-07	0.0000	0.000E+00	0.0000	3.550E-01	0.0036	2.278E+00	0.0231	1.676E+00	0.0170	1.481E-02	0.0001
U-234	9.692E-02	0.0010	4.376E-03	0.0000	0.000E+00	0.0000	3.327E+00	0.0337	3.349E+00	0.0339	1.631E+01	0.1651	2.218E+00	0.0225
U-235	2.202E+01	0.2230	4.637E-04	0.0000	0.000E+00	0.0000	3.773E-01	0.0038	3.816E-01	0.0039	1.846E+00	0.0187	2.511E-01	0.0025
U-238	1.478E+01	0.1497	1.384E-03	0.0000	0.000E+00	0.0000	1.221E+00	0.0124	1.229E+00	0.0124	5.983E+00	0.0606	8.136E-01	0.0082
Total	5.712E+01	0.5784	6.224E-03	0.0001	0.000E+00	0.0000	5.280E+00	0.0535	7.237E+00	0.0733	2.581E+01	0.2614	3.297E+00	0.0334

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.454E+01	0.2485
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.530E+01	0.2562
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.488E+01	0.2519
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.403E+01	0.2434
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.875E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	6.384E+00	0.0839	1.443E-07	0.0000	0.000E+00	0.0000	1.121E-01	0.0015	7.193E-01	0.0095	5.293E-01	0.0070	4.676E-03	0.0001
U-234	1.012E-01	0.0013	4.035E-03	0.0001	0.000E+00	0.0000	3.059E+00	0.0402	3.076E+00	0.0404	1.497E+01	0.1968	2.040E+00	0.0268
U-235	2.025E+01	0.2663	4.492E-04	0.0000	0.000E+00	0.0000	3.736E-01	0.0049	4.362E-01	0.0057	1.695E+00	0.0223	2.375E-01	0.0031
U-238	1.357E+01	0.1784	1.271E-03	0.0000	0.000E+00	0.0000	1.121E+00	0.0147	1.128E+00	0.0148	5.493E+00	0.0722	7.469E-01	0.0098
Total	4.030E+01	0.5300	5.756E-03	0.0001	0.000E+00	0.0000	4.665E+00	0.0613	5.359E+00	0.0705	2.268E+01	0.2983	3.029E+00	0.0398

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.749E+00	0.1019
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.325E+01	0.3057
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.299E+01	0.3023
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.206E+01	0.2901
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.605E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_RF-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.969E+00	0.0302	4.450E-08	0.0000	0.000E+00	0.0000	3.458E-02	0.0005	2.219E-01	0.0034	1.633E-01	0.0025	1.442E-03	0.0000
U-234	1.279E-01	0.0020	3.717E-03	0.0001	0.000E+00	0.0000	2.813E+00	0.0431	2.823E+00	0.0433	1.372E+01	0.2103	1.873E+00	0.0287
U-235	1.861E+01	0.2854	4.470E-04	0.0000	0.000E+00	0.0000	3.735E-01	0.0057	4.864E-01	0.0075	1.555E+00	0.0238	2.271E-01	0.0035
U-238	1.243E+01	0.1906	1.165E-03	0.0000	0.000E+00	0.0000	1.027E+00	0.0157	1.034E+00	0.0158	5.033E+00	0.0772	6.845E-01	0.0105
Total	3.314E+01	0.5082	5.329E-03	0.0001	0.000E+00	0.0000	4.248E+00	0.0651	4.565E+00	0.0700	2.047E+01	0.3139	2.787E+00	0.0427

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.390E+00	0.0367
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.136E+01	0.3275
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.125E+01	0.3259
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.021E+01	0.3099
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.522E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.614E-04	0.0000	3.647E-12	0.0000	0.000E+00	0.0000	2.834E-06	0.0000	1.819E-05	0.0000	1.338E-05	0.0000	1.182E-07	0.0000
U-234	8.779E-01	0.0260	1.966E-03	0.0001	0.000E+00	0.0000	1.656E+00	0.0491	1.523E+00	0.0452	6.959E+00	0.2065	9.826E-01	0.0292
U-235	9.602E+00	0.2849	4.402E-04	0.0000	0.000E+00	0.0000	3.677E-01	0.0109	7.340E-01	0.0218	7.826E-01	0.0232	1.703E-01	0.0051
U-238	6.176E+00	0.1833	5.793E-04	0.0000	0.000E+00	0.0000	5.108E-01	0.0152	5.141E-01	0.0153	2.503E+00	0.0743	3.404E-01	0.0101
Total	1.666E+01	0.4942	2.986E-03	0.0001	0.000E+00	0.0000	2.535E+00	0.0752	2.771E+00	0.0822	1.025E+01	0.3040	1.493E+00	0.0443

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.959E-04	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.200E+01	0.3561
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.166E+01	0.3459
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.005E+01	0.2981
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.370E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.259E-09	0.0000	2.844E-17	0.0000	0.000E+00	0.0000	2.210E-11	0.0000	1.418E-10	0.0000	1.044E-10	0.0000	9.219E-13	0.0000
U-234	2.336E+00	0.1257	9.607E-04	0.0001	0.000E+00	0.0000	1.324E+00	0.0713	9.296E-01	0.0500	3.280E+00	0.1765	5.101E-01	0.0275
U-235	4.377E+00	0.2356	4.107E-04	0.0000	0.000E+00	0.0000	3.429E-01	0.0185	8.180E-01	0.0440	3.370E-01	0.0181	1.309E-01	0.0070
U-238	2.576E+00	0.1387	2.421E-04	0.0000	0.000E+00	0.0000	2.135E-01	0.0115	2.148E-01	0.0116	1.046E+00	0.0563	1.422E-01	0.0077
Total	9.289E+00	0.5000	1.614E-03	0.0001	0.000E+00	0.0000	1.881E+00	0.1012	1.962E+00	0.1056	4.663E+00	0.2510	7.832E-01	0.0422

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.528E-09	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.381E+00	0.4511
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.006E+00	0.3232
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.193E+00	0.2257
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.858E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	2.761E+00	2.697E+00	8.516E-01	2.627E-01	2.153E-05	1.679E-10
U-234	U-234	1.000E+00	7.242E-02	7.229E-02	6.635E-02	6.078E-02	3.016E-02	1.256E-02
U-234	Th-230	1.000E+00	2.852E-07	8.127E-07	2.534E-05	4.824E-05	1.726E-04	2.404E-04
U-234	Ra-226+D	1.000E+00	5.670E-09	4.002E-08	4.233E-05	1.610E-04	2.917E-03	8.083E-03
U-234	Pb-210+D	1.000E+00	2.123E-11	2.922E-10	6.298E-06	3.612E-05	1.038E-03	3.063E-03
U-234	∑DSR(j)		7.242E-02	7.229E-02	6.642E-02	6.103E-02	3.429E-02	2.395E-02
U-235+D	U-235+D	1.000E+00	6.078E-01	6.067E-01	5.569E-01	5.102E-01	2.535E-01	1.057E-01
U-235+D	Pa-231	1.000E+00	2.824E-05	8.889E-05	2.936E-03	5.567E-03	1.908E-02	2.492E-02
U-235+D	Ac-227+D	1.000E+00	2.727E-07	1.649E-06	9.656E-04	2.557E-03	1.177E-02	1.585E-02
U-235+D	∑DSR(j)		6.078E-01	6.068E-01	5.608E-01	5.184E-01	2.843E-01	1.465E-01
U-238	U-238	5.400E-05	3.581E-06	3.575E-06	3.281E-06	3.007E-06	1.494E-06	6.229E-07
U-238+D	U-238+D	9.999E-01	1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.723E-02	3.221E-02
U-238+D	U-234	9.999E-01	1.026E-07	3.074E-07	9.499E-06	1.732E-05	4.282E-05	3.567E-05
U-238+D	Th-230	9.999E-01	2.839E-13	1.845E-12	1.790E-09	6.679E-09	1.052E-07	2.485E-07
U-238+D	Ra-226+D	9.999E-01	3.997E-15	6.056E-14	1.996E-09	1.493E-08	1.226E-06	6.025E-06
U-238+D	Pb-210+D	9.999E-01	1.238E-17	3.507E-16	2.386E-10	2.820E-09	4.143E-07	2.229E-06
U-238+D	∑DSR(j)		1.852E-01	1.849E-01	1.697E-01	1.555E-01	7.727E-02	3.225E-02

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t=					
	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	3.622E-01	3.708E-01	1.174E+00	3.807E+00	4.645E+04	5.956E+09
U-234	1.381E+01	1.383E+01	1.506E+01	1.639E+01	2.917E+01	4.176E+01
U-235	1.645E+00	1.648E+00	1.783E+00	1.929E+00	3.517E+00	6.827E+00
U-238	5.400E+00	5.410E+00	5.893E+00	6.432E+00	1.294E+01	3.101E+01

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)		DSR(i,tmax)	
			G(i,tmin) (pCi/g)	DSR(i,tmin)	G(i,tmax) (pCi/g)	DSR(i,tmax)
Cs-137	9.100E+00	0.000E+00	2.761E+00	3.622E-01	2.761E+00	3.622E-01
U-234	3.500E+02	0.000E+00	7.242E-02	1.381E+01	7.242E-02	1.381E+01
U-235	4.100E+01	0.000E+00	6.078E-01	1.645E+00	6.078E-01	1.645E+00

Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

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U-238	1.300E+02	0.000E+00	1.852E-01	5.400E+00	1.852E-01	5.400E+00
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Summary : RESRAD Forward Run for Resident Farmer Outside Limited Area 4-Rads

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	2.512E+01	2.454E+01	7.749E+00	2.390E+00	1.959E-04	1.528E-09
U-234	U-234	1.000E+00	2.535E+01	2.530E+01	2.322E+01	2.127E+01	1.056E+01	4.396E+00
U-234	U-238	9.999E-01	1.334E-05	3.996E-05	1.235E-03	2.251E-03	5.567E-03	4.638E-03
U-234	ΣDOSE (j)		2.535E+01	2.530E+01	2.322E+01	2.128E+01	1.056E+01	4.401E+00
Th-230	U-234	1.000E+00	9.984E-05	2.844E-04	8.870E-03	1.688E-02	6.039E-02	8.414E-02
Th-230	U-238	9.999E-01	3.691E-11	2.398E-10	2.327E-07	8.683E-07	1.368E-05	3.231E-05
Th-230	ΣDOSE (j)		9.984E-05	2.844E-04	8.871E-03	1.688E-02	6.041E-02	8.417E-02
Ra-226	U-234	1.000E+00	1.984E-06	1.401E-05	1.482E-02	5.635E-02	1.021E+00	2.829E+00
Ra-226	U-238	9.999E-01	5.196E-13	7.872E-12	2.595E-07	1.941E-06	1.594E-04	7.832E-04
Ra-226	ΣDOSE (j)		1.984E-06	1.401E-05	1.482E-02	5.635E-02	1.021E+00	2.830E+00
Pb-210	U-234	1.000E+00	7.429E-09	1.023E-07	2.204E-03	1.264E-02	3.633E-01	1.072E+00
Pb-210	U-238	9.999E-01	1.609E-15	4.559E-14	3.102E-08	3.666E-07	5.386E-05	2.898E-04
Pb-210	ΣDOSE (j)		7.429E-09	1.023E-07	2.204E-03	1.264E-02	3.634E-01	1.072E+00
U-235	U-235	1.000E+00	2.492E+01	2.487E+01	2.283E+01	2.092E+01	1.039E+01	4.334E+00
Pa-231	U-235	1.000E+00	1.158E-03	3.645E-03	1.204E-01	2.282E-01	7.825E-01	1.022E+00
Ac-227	U-235	1.000E+00	1.118E-05	6.760E-05	3.959E-02	1.048E-01	4.825E-01	6.497E-01
U-238	U-238	5.400E-05	4.656E-04	4.647E-04	4.266E-04	3.909E-04	1.942E-04	8.097E-05
U-238	U-238	9.999E-01	2.407E+01	2.403E+01	2.206E+01	2.021E+01	1.004E+01	4.187E+00
U-238	ΣDOSE (j)		2.407E+01	2.403E+01	2.206E+01	2.021E+01	1.004E+01	4.187E+00

THF(i) is the thread fraction of the parent nuclide.

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	9.100E+00	8.888E+00	2.807E+00	8.658E-01	7.097E-05	5.534E-10
U-234	U-234	1.000E+00	3.500E+02	3.494E+02	3.206E+02	2.938E+02	1.458E+02	6.070E+01
U-234	U-238	9.999E-01	0.000E+00	3.679E-04	1.688E-02	3.093E-02	7.679E-02	6.401E-02
U-234	ΣS(j):		3.500E+02	3.494E+02	3.207E+02	2.938E+02	1.458E+02	6.077E+01
Th-230	U-234	1.000E+00	0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Th-230	U-238	9.999E-01	0.000E+00	1.657E-09	3.910E-06	1.475E-05	2.345E-04	5.542E-04
Th-230	ΣS(j):		0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Ra-226	U-234	1.000E+00	0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.186E-01
Ra-226	U-238	9.999E-01	0.000E+00	2.393E-13	2.841E-08	2.157E-07	1.792E-05	8.818E-05
Ra-226	ΣS(j):		0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.187E-01
Pb-210	U-234	1.000E+00	0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.012E-01
Pb-210	U-238	9.999E-01	0.000E+00	1.848E-15	8.373E-09	1.011E-07	1.510E-05	8.142E-05
Pb-210	ΣS(j):		0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.013E-01
U-235	U-235	1.000E+00	4.100E+01	4.093E+01	3.757E+01	3.442E+01	1.710E+01	7.131E+00
Pa-231	U-235	1.000E+00	0.000E+00	8.666E-04	4.129E-02	7.863E-02	2.705E-01	3.535E-01
Ac-227	U-235	1.000E+00	0.000E+00	1.365E-05	2.082E-02	5.574E-02	2.584E-01	3.482E-01
U-238	U-238	5.400E-05	7.020E-03	7.008E-03	6.432E-03	5.894E-03	2.928E-03	1.221E-03
U-238	U-238	9.999E-01	1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.421E+01	2.261E+01
U-238	ΣS(j):		1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.422E+01	2.261E+01

THF(i) is the thread fraction of the parent nuclide.

RESRASCALC.EXE execution time = 8.21 seconds

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

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Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(1)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(2)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(3)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(4)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(5)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(6)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(7)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(8)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(9)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(10)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(11)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(12)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(13)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(14)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(15)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(16)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(17)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(18)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(19)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(20)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(21)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(22)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(23)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(24)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(25)
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(26)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(27)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(28)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(29)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(30)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(31)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(32)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.160E+00	2.072E+00	DCF2(1)
B-1	Cs-137+D	1.554E-04	1.554E-04	DCF2(2)
B-1	Pa-231	5.550E-01	5.550E-01	DCF2(3)
B-1	Pb-210+D	4.111E-02	2.183E-02	DCF2(4)
B-1	Ra-226+D	3.712E-02	3.700E-02	DCF2(5)
B-1	Th-230	3.663E-01	3.663E-01	DCF2(6)
B-1	U-234	3.700E-02	3.700E-02	DCF2(7)
B-1	U-235+D	3.404E-02	3.404E-02	DCF2(8)
B-1	U-238	3.219E-02	3.219E-02	DCF2(9)
B-1	U-238+D	3.222E-02	3.219E-02	DCF2(10)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	5.865E-03	4.440E-03	DCF3(1)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(2)
D-1	Pa-231	2.960E-03	2.960E-03	DCF3(3)

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Pb-210+D	1.296E-02	7.030E-03	DCF3(4)
D-1	Ra-226+D	5.551E-03	5.550E-03	DCF3(5)
D-1	Th-230	8.140E-04	8.140E-04	DCF3(6)
D-1	U-234	2.738E-04	2.738E-04	DCF3(7)
D-1	U-235+D	2.606E-04	2.590E-04	DCF3(8)
D-1	U-238	2.479E-04	2.479E-04	DCF3(9)
D-1	U-238+D	2.634E-04	2.479E-04	DCF3(10)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(2,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(2,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(3,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(7,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(7,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(8,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(8,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: RU for U-Landfill Plus ICRP 60 & ICRP 72 (Age 15)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(7,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(7,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(8,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(8,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	9.100E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): U-234	3.500E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	4.100E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	1.300E+02	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(9)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(7)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(8)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(9)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.080E-06	1.000E-04	---	MLINH
R017	Exposure duration	1.200E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	1.000E+00	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm*3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm*3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_RU-QC.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_RU-QC.RAD

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 20000.00 square meters	Cs-137	9.100E+00
Thickness: 0.15 meters	U-234	3.500E+02
Cover Depth: 0.00 meters	U-235	4.100E+01
	U-238	1.300E+02

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	5.959E+00	5.906E+00	4.255E+00	3.536E+00	1.789E+00	9.942E-01
M(t):	5.959E+00	5.906E+00	4.255E+00	3.536E+00	1.789E+00	9.942E-01

Maximum TDOSE(t): 5.959E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.990E+00	0.3339	1.917E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.263E-03	0.0002
U-234	9.334E-03	0.0016	1.775E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.796E-01	0.0469
U-235	2.121E+00	0.3560	1.913E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.117E-02	0.0052
U-238	1.424E+00	0.2390	5.741E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.992E-02	0.0168
Total	5.545E+00	0.9304	2.541E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.119E-01	0.0691

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.991E+00	0.3342
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.907E-01	0.0488
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.153E+00	0.3612
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.524E+00	0.2558
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.959E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.944E+00	0.3291	1.873E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.234E-03	0.0002
U-234	9.319E-03	0.0016	1.772E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.791E-01	0.0473
U-235	2.118E+00	0.3585	1.911E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.112E-02	0.0053
U-238	1.421E+00	0.2407	5.731E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.974E-02	0.0169
Total	5.492E+00	0.9299	2.536E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.112E-01	0.0696

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.945E+00	0.3293
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.902E-01	0.0491
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.149E+00	0.3639
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.522E+00	0.2577
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.906E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	6.138E-01	0.1442	5.914E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.896E-04	0.0001
U-234	9.731E-03	0.0023	1.634E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.565E-01	0.0603
U-235	1.947E+00	0.4575	1.847E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.928E-02	0.0069
U-238	1.305E+00	0.3066	5.262E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.156E-02	0.0215
Total	3.875E+00	0.9107	2.345E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.778E-01	0.0888

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.142E-01	0.1443
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.679E-01	0.0630
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.976E+00	0.4645
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.397E+00	0.3282
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.255E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_RU-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.893E-01	0.0535	1.824E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.202E-04	0.0000
U-234	1.230E-02	0.0035	1.504E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.356E-01	0.0666
U-235	1.789E+00	0.5060	1.832E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.781E-02	0.0079
U-238	1.195E+00	0.3381	4.822E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.391E-02	0.0237
Total	3.187E+00	0.9011	2.170E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.474E-01	0.0982

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.895E-01	0.0536
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.494E-01	0.0705
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.817E+00	0.5140
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.280E+00	0.3619
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.536E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.552E-05	0.0000	1.495E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.851E-09	0.0000
U-234	8.441E-02	0.0472	7.924E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.246E-01	0.0697
U-235	9.233E-01	0.5161	1.770E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.977E-02	0.0110
U-238	5.939E-01	0.3320	2.398E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.173E-02	0.0233
Total	1.602E+00	0.8953	1.209E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.861E-01	0.1040

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.553E-05	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.098E-01	0.1173
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.432E-01	0.5273
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.359E-01	0.3554
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.789E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.210E-10	0.0000	1.166E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.682E-14	0.0000
U-234	2.246E-01	0.2259	3.837E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.849E-02	0.0689
U-235	4.208E-01	0.4233	1.634E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.444E-02	0.0145
U-238	2.477E-01	0.2492	1.002E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.744E-02	0.0175
Total	8.932E-01	0.8984	6.473E-04	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.004E-01	0.1010

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.211E-10	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.935E-01	0.2952
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.354E-01	0.4380
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.653E-01	0.2668
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.942E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	2.188E-01	2.137E-01	6.750E-02	2.082E-02	1.706E-06	1.331E-11
U-234	U-234	1.000E+00	8.305E-04	8.291E-04	7.609E-04	6.971E-04	3.459E-04	1.440E-04
U-234	Th-230	1.000E+00	1.129E-08	3.384E-08	1.091E-06	2.077E-06	7.432E-06	1.035E-05
U-234	Ra-226+D	1.000E+00	4.643E-10	3.248E-09	3.411E-06	1.297E-05	2.350E-04	6.511E-04
U-234	Pb-210+D	1.000E+00	1.927E-13	2.870E-12	6.783E-08	3.897E-07	1.121E-05	3.309E-05
U-234	∑DSR(j)		8.305E-04	8.291E-04	7.654E-04	7.125E-04	5.995E-04	8.386E-04
U-235+D	U-235+D	1.000E+00	5.250E-02	5.241E-02	4.811E-02	4.408E-02	2.190E-02	9.132E-03
U-235+D	Pa-231	1.000E+00	2.280E-07	6.835E-07	2.193E-05	4.156E-05	1.424E-04	1.860E-04
U-235+D	Ac-227+D	1.000E+00	1.707E-08	1.183E-07	7.908E-05	2.098E-04	9.670E-04	1.302E-03
U-235+D	∑DSR(j)		5.250E-02	5.241E-02	4.821E-02	4.433E-02	2.301E-02	1.062E-02
U-238	U-238	5.400E-05	3.963E-08	3.956E-08	3.632E-08	3.327E-08	1.653E-08	6.894E-09
U-238+D	U-238+D	9.999E-01	1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.040E-03
U-238+D	U-234	9.999E-01	1.177E-09	3.525E-09	1.089E-07	1.986E-07	4.911E-07	4.091E-07
U-238+D	Th-230	9.999E-01	1.066E-14	7.457E-14	7.695E-11	2.874E-10	4.533E-09	1.070E-08
U-238+D	Ra-226+D	9.999E-01	3.290E-16	4.930E-15	1.609E-10	1.203E-09	9.878E-08	4.853E-07
U-238+D	Pb-210+D	9.999E-01	1.094E-19	3.369E-18	2.567E-12	3.041E-11	4.475E-09	2.408E-08
U-238+D	∑DSR(j)		1.173E-02	1.171E-02	1.074E-02	9.845E-03	4.891E-03	2.041E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t =					
	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	4.570E+00	4.679E+00	1.482E+01	4.803E+01	5.860E+05	7.515E+10
U-234	1.204E+03	1.206E+03	1.306E+03	1.404E+03	1.668E+03	1.192E+03
U-235	1.905E+01	1.908E+01	2.074E+01	2.256E+01	4.347E+01	9.416E+01
U-238	8.528E+01	8.542E+01	9.307E+01	1.016E+02	2.044E+02	4.901E+02

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,t) in (mrem/yr)/(pCi/g)			
			DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
Cs-137	9.100E+00	0.000E+00	2.188E-01	4.570E+00	2.188E-01	4.570E+00
U-234	3.500E+02	1.000E+03	8.386E-04	1.192E+03	8.305E-04	1.204E+03
U-235	4.100E+01	0.000E+00	5.250E-02	1.905E+01	5.250E-02	1.905E+01

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

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U-238	1.300E+02	0.000E+00	1.173E-02	8.528E+01	1.173E-02	8.528E+01
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Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.991E+00	1.945E+00	6.142E-01	1.895E-01	1.553E-05	1.211E-10
U-234	U-234	1.000E+00	2.907E-01	2.902E-01	2.663E-01	2.440E-01	1.211E-01	5.042E-02
U-234	U-238	9.999E-01	1.530E-07	4.583E-07	1.416E-05	2.582E-05	6.384E-05	5.319E-05
U-234	ΣDOSE (j)		2.907E-01	2.902E-01	2.663E-01	2.440E-01	1.211E-01	5.047E-02
Th-230	U-234	1.000E+00	3.951E-06	1.184E-05	3.817E-04	7.269E-04	2.601E-03	3.624E-03
Th-230	U-238	9.999E-01	1.386E-12	9.694E-12	1.000E-08	3.736E-08	5.892E-07	1.392E-06
Th-230	ΣDOSE (j)		3.951E-06	1.184E-05	3.817E-04	7.269E-04	2.602E-03	3.625E-03
Ra-226	U-234	1.000E+00	1.625E-07	1.137E-06	1.194E-03	4.540E-03	8.225E-02	2.279E-01
Ra-226	U-238	9.999E-01	4.277E-14	6.409E-13	2.091E-08	1.564E-07	1.284E-05	6.309E-05
Ra-226	ΣDOSE (j)		1.625E-07	1.137E-06	1.194E-03	4.540E-03	8.226E-02	2.280E-01
Pb-210	U-234	1.000E+00	6.745E-11	1.004E-09	2.374E-05	1.364E-04	3.925E-03	1.158E-02
Pb-210	U-238	9.999E-01	1.422E-17	4.380E-16	3.337E-10	3.953E-09	5.818E-07	3.131E-06
Pb-210	ΣDOSE (j)		6.745E-11	1.004E-09	2.374E-05	1.364E-04	3.925E-03	1.158E-02
U-235	U-235	1.000E+00	2.153E+00	2.149E+00	1.972E+00	1.807E+00	8.977E-01	3.744E-01
Pa-231	U-235	1.000E+00	9.349E-06	2.802E-05	8.990E-04	1.704E-03	5.839E-03	7.625E-03
Ac-227	U-235	1.000E+00	6.998E-07	4.852E-06	3.242E-03	8.602E-03	3.965E-02	5.340E-02
U-238	U-238	5.400E-05	5.152E-06	5.143E-06	4.721E-06	4.326E-06	2.149E-06	8.962E-07
U-238	U-238	9.999E-01	1.524E+00	1.522E+00	1.397E+00	1.280E+00	6.358E-01	2.651E-01
U-238	ΣDOSE (j)		1.524E+00	1.522E+00	1.397E+00	1.280E+00	6.358E-01	2.651E-01

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Forward Run for Recreational User Outside Limited Area 4-Rads

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	9.100E+00	8.888E+00	2.807E+00	8.658E-01	7.097E-05	5.534E-10
U-234	U-234	1.000E+00	3.500E+02	3.494E+02	3.206E+02	2.938E+02	1.458E+02	6.070E+01
U-234	U-238	9.999E-01	0.000E+00	3.679E-04	1.688E-02	3.093E-02	7.679E-02	6.401E-02
U-234	ΣS(j):		3.500E+02	3.494E+02	3.207E+02	2.938E+02	1.458E+02	6.077E+01
Th-230	U-234	1.000E+00	0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Th-230	U-238	9.999E-01	0.000E+00	1.657E-09	3.910E-06	1.475E-05	2.345E-04	5.542E-04
Th-230	ΣS(j):		0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Ra-226	U-234	1.000E+00	0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.186E-01
Ra-226	U-238	9.999E-01	0.000E+00	2.393E-13	2.841E-08	2.157E-07	1.792E-05	8.818E-05
Ra-226	ΣS(j):		0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.187E-01
Pb-210	U-234	1.000E+00	0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.012E-01
Pb-210	U-238	9.999E-01	0.000E+00	1.848E-15	8.373E-09	1.011E-07	1.510E-05	8.142E-05
Pb-210	ΣS(j):		0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.013E-01
U-235	U-235	1.000E+00	4.100E+01	4.093E+01	3.757E+01	3.442E+01	1.710E+01	7.131E+00
Pa-231	U-235	1.000E+00	0.000E+00	8.666E-04	4.129E-02	7.863E-02	2.705E-01	3.535E-01
Ac-227	U-235	1.000E+00	0.000E+00	1.365E-05	2.082E-02	5.574E-02	2.584E-01	3.482E-01
U-238	U-238	5.400E-05	7.020E-03	7.008E-03	6.432E-03	5.894E-03	2.928E-03	1.221E-03
U-238	U-238	9.999E-01	1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.421E+01	2.261E+01
U-238	ΣS(j):		1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.422E+01	2.261E+01

THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 7.42 seconds

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: ICRP 60)	4.485E-04	4.485E-04	DCF1(1)
A-1	At-218 (Source: ICRP 60)	4.878E-03	4.878E-03	DCF1(2)
A-1	Ba-137m (Source: ICRP 60)	3.383E+00	3.383E+00	DCF1(3)
A-1	Bi-210 (Source: ICRP 60)	5.476E-03	5.476E-03	DCF1(4)
A-1	Bi-211 (Source: ICRP 60)	2.373E-01	2.373E-01	DCF1(5)
A-1	Bi-214 (Source: ICRP 60)	9.325E+00	9.325E+00	DCF1(6)
A-1	Cs-137 (Source: ICRP 60)	8.372E-04	8.372E-04	DCF1(7)
A-1	Fr-223 (Source: ICRP 60)	1.813E-01	1.813E-01	DCF1(8)
A-1	Pa-231 (Source: ICRP 60)	1.762E-01	1.762E-01	DCF1(9)
A-1	Pa-234 (Source: ICRP 60)	1.088E+01	1.088E+01	DCF1(10)
A-1	Pa-234m (Source: ICRP 60)	9.867E-02	9.867E-02	DCF1(11)
A-1	Pb-210 (Source: ICRP 60)	1.981E-03	1.981E-03	DCF1(12)
A-1	Pb-211 (Source: ICRP 60)	2.915E-01	2.915E-01	DCF1(13)
A-1	Pb-214 (Source: ICRP 60)	1.243E+00	1.243E+00	DCF1(14)
A-1	Po-210 (Source: ICRP 60)	4.934E-05	4.934E-05	DCF1(15)
A-1	Po-211 (Source: ICRP 60)	4.485E-02	4.485E-02	DCF1(16)
A-1	Po-214 (Source: ICRP 60)	4.840E-04	4.840E-04	DCF1(17)
A-1	Po-215 (Source: ICRP 60)	9.456E-04	9.456E-04	DCF1(18)
A-1	Po-218 (Source: ICRP 60)	5.326E-05	5.326E-05	DCF1(19)
A-1	Ra-223 (Source: ICRP 60)	5.532E-01	5.532E-01	DCF1(20)
A-1	Ra-226 (Source: ICRP 60)	2.915E-02	2.915E-02	DCF1(21)
A-1	Rn-219 (Source: ICRP 60)	2.859E-01	2.859E-01	DCF1(22)
A-1	Rn-222 (Source: ICRP 60)	2.186E-03	2.186E-03	DCF1(23)
A-1	Th-227 (Source: ICRP 60)	4.803E-01	4.803E-01	DCF1(24)
A-1	Th-230 (Source: ICRP 60)	1.071E-03	1.071E-03	DCF1(25)
A-1	Th-231 (Source: ICRP 60)	3.214E-02	3.214E-02	DCF1(26)
A-1	Th-234 (Source: ICRP 60)	2.130E-02	2.130E-02	DCF1(27)
A-1	Tl-207 (Source: ICRP 60)	2.299E-02	2.299E-02	DCF1(28)
A-1	Tl-210 (Source: ICRP 60)	1.661E+01	1.661E+01	DCF1(29)
A-1	U-234 (Source: ICRP 60)	3.439E-04	3.439E-04	DCF1(30)
A-1	U-235 (Source: ICRP 60)	6.597E-01	6.597E-01	DCF1(31)
A-1	U-238 (Source: ICRP 60)	7.961E-05	7.961E-05	DCF1(32)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	2.104E+00	2.035E+00	DCF2(1)
B-1	Cs-137+D	1.443E-04	1.443E-04	DCF2(2)
B-1	Pa-231	5.180E-01	5.180E-01	DCF2(3)
B-1	Pb-210+D	3.697E-02	2.072E-02	DCF2(4)
B-1	Ra-226+D	3.526E-02	3.515E-02	DCF2(5)
B-1	Th-230	3.700E-01	3.700E-01	DCF2(6)
B-1	U-234	3.478E-02	3.478E-02	DCF2(7)
B-1	U-235+D	3.145E-02	3.145E-02	DCF2(8)
B-1	U-238	2.960E-02	2.960E-02	DCF2(9)
B-1	U-238+D	2.963E-02	2.960E-02	DCF2(10)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	4.473E-03	4.070E-03	DCF3(1)
D-1	Cs-137+D	4.810E-05	4.810E-05	DCF3(2)
D-1	Pa-231	2.627E-03	2.627E-03	DCF3(3)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Pb-210+D	6.998E-03	2.553E-03	DCF3(4)
D-1	Ra-226+D	1.037E-03	1.036E-03	DCF3(5)
D-1	Th-230	7.770E-04	7.770E-04	DCF3(6)
D-1	U-234	1.813E-04	1.813E-04	DCF3(7)
D-1	U-235+D	1.752E-04	1.739E-04	DCF3(8)
D-1	U-238	1.665E-04	1.665E-04	DCF3(9)
D-1	U-238+D	1.791E-04	1.665E-04	DCF3(10)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(2,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(2,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(3,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(7,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(7,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(8,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(8,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: ICRP 60 & ICRP 72 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(7,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(7,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(8,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(8,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See EFTG table in Ground Pathway of Detailed Report.

*Base Case means Default.Lib w/o Associate Nuclide contributions.

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICKO
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.000E+00	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+03	1.000E+02	---	T(6)
R011	Times for calculations (yr)	not used	3.000E+02	---	T(7)
R011	Times for calculations (yr)	not used	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	9.100E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): U-234	3.500E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	4.100E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	1.300E+02	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(9)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.460E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.170E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	9.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.240E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	3.100E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.183E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(7)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(8)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	6.680E+01	5.000E+01	---	DCNUCC(9)
R016	Unsat. zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.749E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.603E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.130E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.338E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.343E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.662E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	2.000E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.610E-06	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.700E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm ³)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm ³)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_WW-QC.RAD

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 20000.00 square meters	Cs-137	9.100E+00
Thickness: 0.15 meters	U-234	3.500E+02
Cover Depth: 0.00 meters	U-235	4.100E+01
	U-238	1.300E+02

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.237E+01	1.226E+01	8.778E+00	7.271E+00	3.671E+00	2.039E+00
M(t):	1.237E+01	1.226E+01	8.778E+00	7.271E+00	3.671E+00	2.039E+00

Maximum TDOSE(t): 1.237E+01 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.229E+00	0.3417	5.640E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.684E-03	0.0002
U-234	1.984E-02	0.0016	5.285E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.934E-01	0.0318
U-235	4.508E+00	0.3643	5.600E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.453E-02	0.0036
U-238	3.026E+00	0.2445	1.672E-03	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.443E-01	0.0117
Total	1.178E+01	0.9521	7.518E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.849E-01	0.0473

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.231E+00	0.3419
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.185E-01	0.0338
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.553E+00	0.3679
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.172E+00	0.2563
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.237E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.130E+00	0.3368	5.509E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.622E-03	0.0002
U-234	1.980E-02	0.0016	5.277E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.927E-01	0.0320
U-235	4.500E+00	0.3670	5.592E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.447E-02	0.0036
U-238	3.021E+00	0.2463	1.669E-03	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.441E-01	0.0118
Total	1.167E+01	0.9518	7.506E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.839E-01	0.0476

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E+00	0.3371
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.178E-01	0.0341
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.545E+00	0.3706
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.166E+00	0.2582
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.226E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.304E+00	0.1486	1.740E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.280E-04	0.0001
U-234	2.068E-02	0.0024	4.866E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.612E-01	0.0411
U-235	4.137E+00	0.4713	5.417E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.206E-02	0.0048
U-238	2.773E+00	0.3158	1.533E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.323E-01	0.0151
Total	8.235E+00	0.9381	6.941E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.363E-01	0.0611

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.305E+00	0.1487
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.867E-01	0.0441
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.180E+00	0.4762
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.906E+00	0.3311
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.778E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.024E-01	0.0553	5.366E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.554E-04	0.0000
U-234	2.613E-02	0.0036	4.483E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.318E-01	0.0456
U-235	3.803E+00	0.5230	5.391E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.022E-02	0.0055
U-238	2.540E+00	0.3494	1.404E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.212E-01	0.0167
Total	6.771E+00	0.9313	6.426E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.934E-01	0.0679

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.026E-01	0.0554
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.624E-01	0.0498
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.843E+00	0.5286
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.663E+00	0.3662
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.271E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	3.298E-05	0.0000	4.398E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.093E-08	0.0000
U-234	1.794E-01	0.0489	2.371E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E-01	0.0474
U-235	1.962E+00	0.5344	5.308E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.016E-02	0.0082
U-238	1.262E+00	0.3437	6.986E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.028E-02	0.0164
Total	3.403E+00	0.9270	3.601E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.644E-01	0.0720

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.300E-05	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.558E-01	0.0969
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.993E+00	0.5427
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.323E+00	0.3603
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.671E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_WW-QC.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.572E-10	0.0000	3.430E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.632E-13	0.0000
U-234	4.773E-01	0.2341	1.159E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.033E-02	0.0443
U-235	8.942E-01	0.4386	4.953E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.317E-02	0.0114
U-238	5.264E-01	0.2582	2.919E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.518E-02	0.0124
Total	1.898E+00	0.9310	1.946E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.387E-01	0.0680

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.573E-10	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.688E-01	0.2790
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.179E-01	0.4503
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.519E-01	0.2707
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.039E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_WW-QC.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)					
			0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	4.650E-01	4.542E-01	1.434E-01	4.424E-02	3.626E-06	2.828E-11
U-234	U-234	1.000E+00	1.196E-03	1.194E-03	1.095E-03	1.004E-03	4.980E-04	2.074E-04
U-234	Th-230	1.000E+00	2.320E-08	6.954E-08	2.241E-06	4.268E-06	1.527E-05	2.128E-05
U-234	Ra-226+D	1.000E+00	9.685E-10	6.775E-09	7.114E-06	2.705E-05	4.901E-04	1.358E-03
U-234	Pb-210+D	1.000E+00	2.241E-13	3.337E-12	7.887E-08	4.531E-07	1.304E-05	3.847E-05
U-234	∑DSR(j)		1.196E-03	1.194E-03	1.105E-03	1.035E-03	1.016E-03	1.625E-03
U-235+D	U-235+D	1.000E+00	1.110E-01	1.108E-01	1.017E-01	9.322E-02	4.631E-02	1.931E-02
U-235+D	Pa-231	1.000E+00	4.634E-07	1.389E-06	4.456E-05	8.445E-05	2.894E-04	3.779E-04
U-235+D	Ac-227+D	1.000E+00	3.534E-08	2.450E-07	1.637E-04	4.344E-04	2.002E-03	2.697E-03
U-235+D	∑DSR(j)		1.110E-01	1.108E-01	1.020E-01	9.374E-02	4.860E-02	2.239E-02
U-238	U-238	5.400E-05	5.716E-08	5.706E-08	5.237E-08	4.799E-08	2.384E-08	9.942E-09
U-238+D	U-238+D	9.999E-01	2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.244E-03
U-238+D	U-234	9.999E-01	1.694E-09	5.075E-09	1.568E-07	2.860E-07	7.070E-07	5.890E-07
U-238+D	Th-230	9.999E-01	2.191E-14	1.532E-13	1.581E-10	5.907E-10	9.315E-09	2.200E-08
U-238+D	Ra-226+D	9.999E-01	6.862E-16	1.028E-14	3.355E-10	2.510E-09	2.060E-07	1.012E-06
U-238+D	Pb-210+D	9.999E-01	1.272E-19	3.918E-18	2.985E-12	3.536E-11	5.203E-09	2.800E-08
U-238+D	∑DSR(j)		2.440E-02	2.436E-02	2.236E-02	2.048E-02	1.018E-02	4.245E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 1.000E+00 mrem/yr

Nuclide (i)	t=					
	0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	2.151E+00	2.202E+00	6.972E+00	2.260E+01	2.758E+05	3.536E+10
U-234	8.363E+02	8.377E+02	9.051E+02	9.658E+02	9.838E+02	6.153E+02
U-235	9.006E+00	9.021E+00	9.809E+00	1.067E+01	2.058E+01	4.467E+01
U-238	4.098E+01	4.106E+01	4.473E+01	4.882E+01	9.826E+01	2.355E+02

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

and Single Radionuclide Soil Guidelines G(i,t) in pCi/g

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)		DSR(i,tmax)	
			G(i,tmin) (pCi/g)	DSR(i,tmin)	G(i,tmax) (pCi/g)	DSR(i,tmax)
Cs-137	9.100E+00	0.000E+00	4.650E-01	2.151E+00	4.650E-01	2.151E+00
U-234	3.500E+02	1.000E+03	1.625E-03	6.153E+02	1.196E-03	8.363E+02
U-235	4.100E+01	0.000E+00	1.110E-01	9.006E+00	1.110E-01	9.006E+00

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_WW-QC.RAD

U-238	1.300E+02	0.000E+00	2.440E-02	4.098E+01	2.440E-02	4.098E+01
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Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_WW-QC.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	4.231E+00	4.133E+00	1.305E+00	4.026E-01	3.300E-05	2.573E-10
U-234	U-234	1.000E+00	4.185E-01	4.178E-01	3.834E-01	3.513E-01	1.743E-01	7.259E-02
U-234	U-238	9.999E-01	2.203E-07	6.598E-07	2.039E-05	3.717E-05	9.192E-05	7.657E-05
U-234	ΣDOSE (j)		4.185E-01	4.178E-01	3.834E-01	3.513E-01	1.744E-01	7.266E-02
Th-230	U-234	1.000E+00	8.119E-06	2.434E-05	7.844E-04	1.494E-03	5.345E-03	7.448E-03
Th-230	U-238	9.999E-01	2.849E-12	1.992E-11	2.056E-08	7.679E-08	1.211E-06	2.860E-06
Th-230	ΣDOSE (j)		8.119E-06	2.434E-05	7.844E-04	1.494E-03	5.347E-03	7.450E-03
Ra-226	U-234	1.000E+00	3.390E-07	2.371E-06	2.490E-03	9.469E-03	1.716E-01	4.753E-01
Ra-226	U-238	9.999E-01	8.921E-14	1.337E-12	4.362E-08	3.263E-07	2.679E-05	1.316E-04
Ra-226	ΣDOSE (j)		3.390E-07	2.371E-06	2.490E-03	9.469E-03	1.716E-01	4.755E-01
Pb-210	U-234	1.000E+00	7.842E-11	1.168E-09	2.760E-05	1.586E-04	4.563E-03	1.346E-02
Pb-210	U-238	9.999E-01	1.653E-17	5.093E-16	3.880E-10	4.596E-09	6.764E-07	3.640E-06
Pb-210	ΣDOSE (j)		7.842E-11	1.168E-09	2.760E-05	1.586E-04	4.564E-03	1.347E-02
U-235	U-235	1.000E+00	4.553E+00	4.545E+00	4.171E+00	3.822E+00	1.899E+00	7.918E-01
Pa-231	U-235	1.000E+00	1.900E-05	5.695E-05	1.827E-03	3.462E-03	1.187E-02	1.550E-02
Ac-227	U-235	1.000E+00	1.449E-06	1.005E-05	6.713E-03	1.781E-02	8.209E-02	1.106E-01
U-238	U-238	5.400E-05	7.431E-06	7.418E-06	6.808E-06	6.238E-06	3.099E-06	1.292E-06
U-238	U-238	9.999E-01	3.172E+00	3.166E+00	2.906E+00	2.663E+00	1.323E+00	5.517E-01
U-238	ΣDOSE (j)		3.172E+00	3.166E+00	2.906E+00	2.663E+00	1.323E+00	5.517E-01

THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Forward Run for Wildlife Worker Outside Limited Area 4 Rads

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_FORWARDRUN_OUTSIDE-LA_FEB2011_WW-QC.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

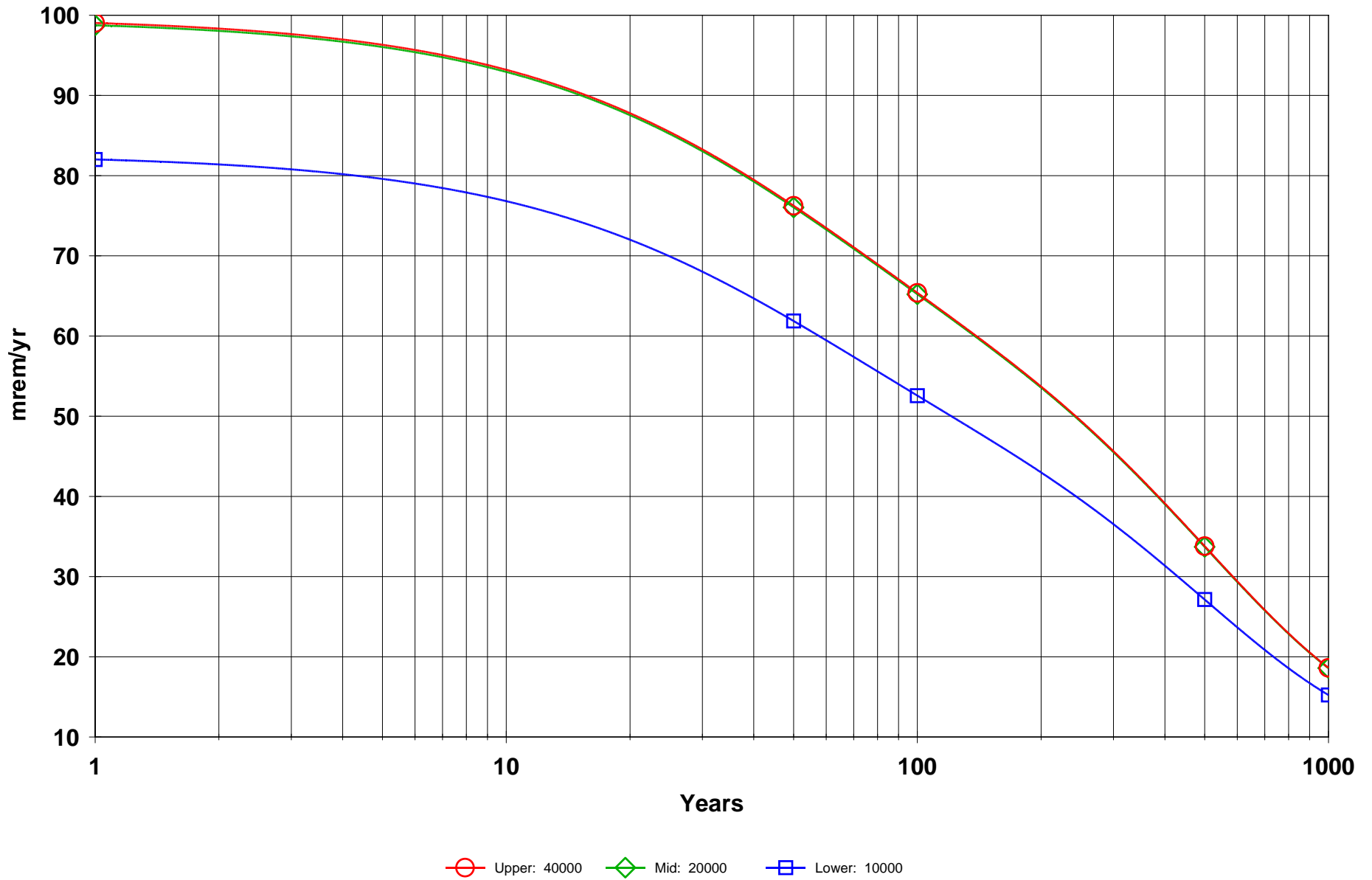
Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g					
			t= 0.000E+00	1.000E+00	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	9.100E+00	8.888E+00	2.807E+00	8.658E-01	7.097E-05	5.534E-10
U-234	U-234	1.000E+00	3.500E+02	3.494E+02	3.206E+02	2.938E+02	1.458E+02	6.070E+01
U-234	U-238	9.999E-01	0.000E+00	3.679E-04	1.688E-02	3.093E-02	7.679E-02	6.401E-02
U-234	ΣS(j):		3.500E+02	3.494E+02	3.207E+02	2.938E+02	1.458E+02	6.077E+01
Th-230	U-234	1.000E+00	0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Th-230	U-238	9.999E-01	0.000E+00	1.657E-09	3.910E-06	1.475E-05	2.345E-04	5.542E-04
Th-230	ΣS(j):		0.000E+00	3.148E-03	1.507E-01	2.883E-01	1.036E+00	1.444E+00
Ra-226	U-234	1.000E+00	0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.186E-01
Ra-226	U-238	9.999E-01	0.000E+00	2.393E-13	2.841E-08	2.157E-07	1.792E-05	8.818E-05
Ra-226	ΣS(j):		0.000E+00	6.819E-07	1.638E-03	6.290E-03	1.149E-01	3.187E-01
Pb-210	U-234	1.000E+00	0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.012E-01
Pb-210	U-238	9.999E-01	0.000E+00	1.848E-15	8.373E-09	1.011E-07	1.510E-05	8.142E-05
Pb-210	ΣS(j):		0.000E+00	7.011E-09	6.019E-04	3.508E-03	1.020E-01	3.013E-01
U-235	U-235	1.000E+00	4.100E+01	4.093E+01	3.757E+01	3.442E+01	1.710E+01	7.131E+00
Pa-231	U-235	1.000E+00	0.000E+00	8.666E-04	4.129E-02	7.863E-02	2.705E-01	3.535E-01
Ac-227	U-235	1.000E+00	0.000E+00	1.365E-05	2.082E-02	5.574E-02	2.584E-01	3.482E-01
U-238	U-238	5.400E-05	7.020E-03	7.008E-03	6.432E-03	5.894E-03	2.928E-03	1.221E-03
U-238	U-238	9.999E-01	1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.421E+01	2.261E+01
U-238	ΣS(j):		1.300E+02	1.298E+02	1.191E+02	1.091E+02	5.422E+01	2.261E+01

THF(i) is the thread fraction of the parent nuclide.

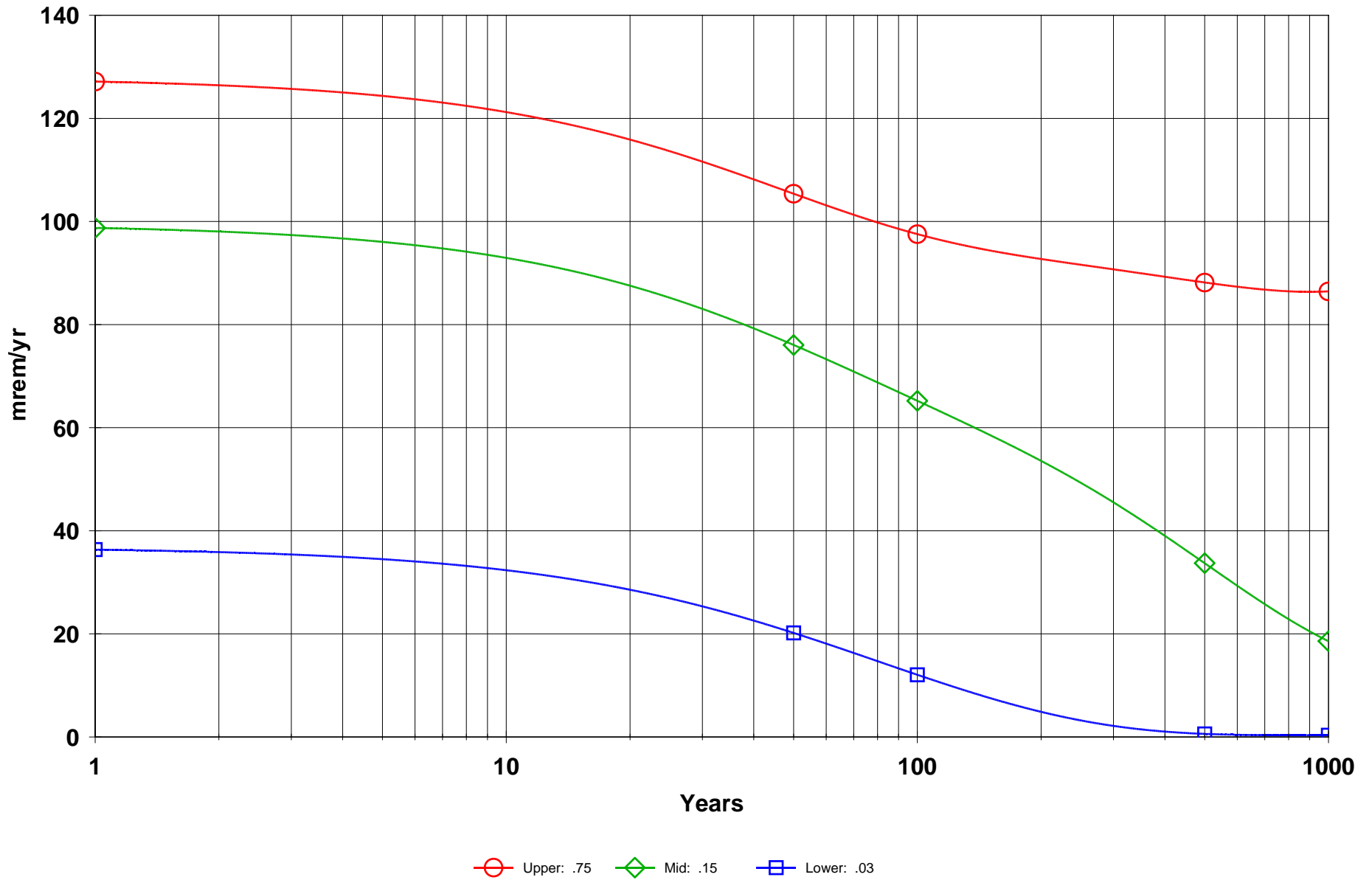
RESRAD.EXE execution time = 19.70 seconds

ATTACHMENT 7
UNCERTAINTY ANALYSIS REPORT

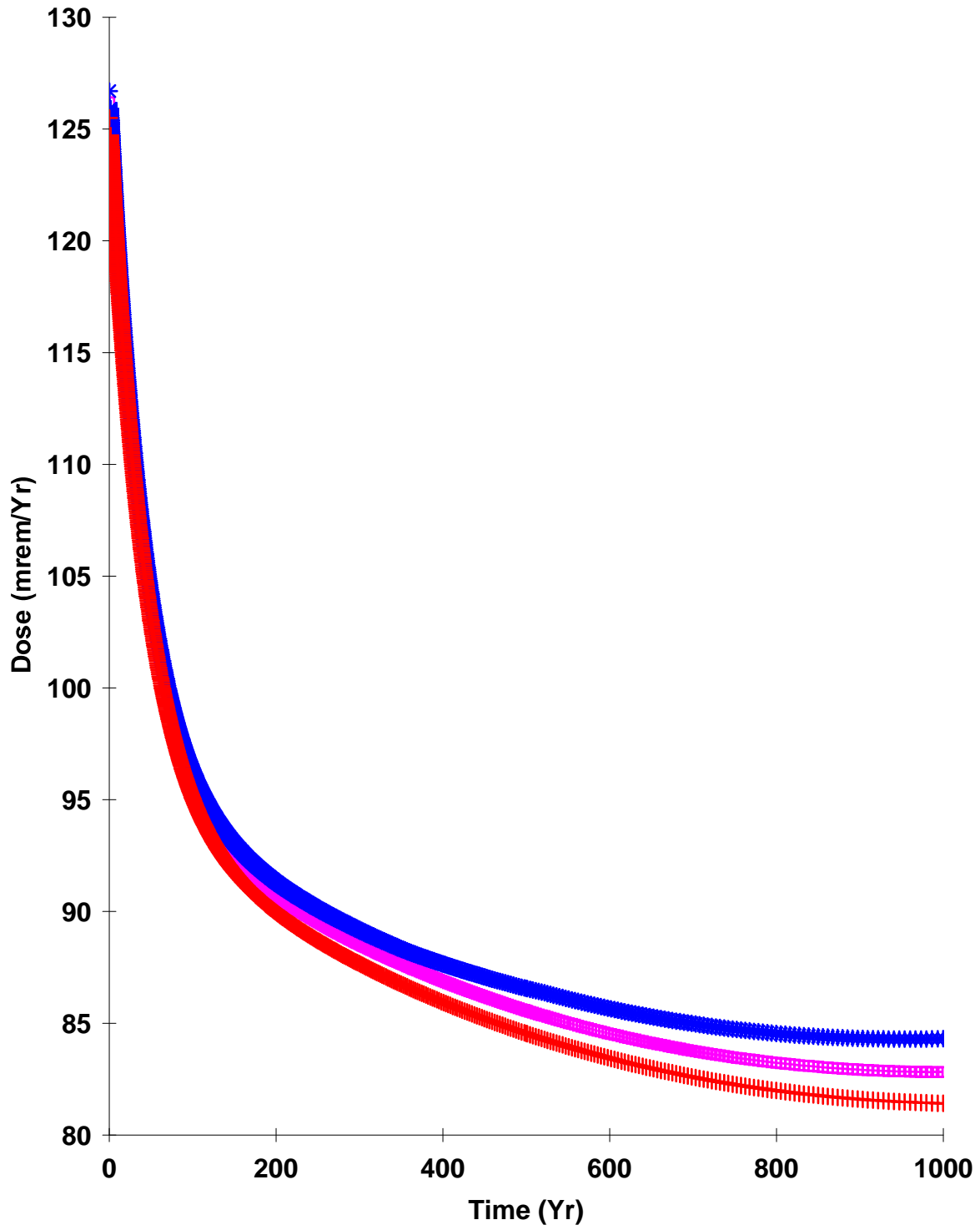
DOSE: All Nuclides Summed, All Pathways Summed With SA on Area of contaminated zone



DOSE: All Nuclides Summed, All Pathways Summed With SA on Thickness of contaminated zone



Time vs. Dose using the 95-th Percentile Dose, Repetition=All Repetitions



+ Repetition 1 * Repetition 2 □ Repetition 3

Probabilistic results summary : RESRAD Uncertainty Analysis for Resident Farmer

e: C:\RESRAD_FAMILY\RESRAD\USERFILES\4RADS_PROBANA_OUTSIDE-LA_FEB2011_RF-QC.RAD

Cumulative Probability Summary for: Total Dose Over Pathways

Cumulative Probability	Dose (t), mrem/yr					
	t= 0.00E+00	1.00E+00	5.00E+01	1.00E+02	5.00E+02	1.00E+03
0.025	4.89E+01	4.83E+01	3.06E+01	2.12E+01	2.50E+00	8.98E-01
0.050	5.91E+01	5.85E+01	3.96E+01	2.96E+01	6.99E+00	2.39E+00
0.075	6.95E+01	6.89E+01	4.94E+01	4.00E+01	1.23E+01	4.71E+00
0.100	7.53E+01	7.47E+01	5.44E+01	4.45E+01	1.59E+01	6.57E+00
0.125	8.59E+01	8.53E+01	6.37E+01	5.30E+01	2.28E+01	1.11E+01
0.150	9.06E+01	8.99E+01	6.86E+01	5.80E+01	2.90E+01	1.50E+01
0.175	9.42E+01	9.35E+01	7.26E+01	6.28E+01	3.32E+01	1.97E+01
0.200	9.53E+01	9.46E+01	7.36E+01	6.50E+01	3.63E+01	2.27E+01
0.225	9.83E+01	9.76E+01	7.68E+01	6.69E+01	4.09E+01	2.60E+01
0.250	1.01E+02	1.00E+02	7.84E+01	6.85E+01	4.44E+01	2.92E+01
0.275	1.02E+02	1.02E+02	7.98E+01	7.02E+01	4.61E+01	3.22E+01
0.300	1.03E+02	1.03E+02	8.09E+01	7.16E+01	4.76E+01	3.48E+01
0.325	1.05E+02	1.04E+02	8.21E+01	7.27E+01	4.96E+01	3.68E+01
0.350	1.05E+02	1.04E+02	8.29E+01	7.42E+01	5.28E+01	3.97E+01
0.375	1.06E+02	1.06E+02	8.39E+01	7.51E+01	5.43E+01	4.17E+01
0.400	1.07E+02	1.07E+02	8.51E+01	7.63E+01	5.66E+01	4.45E+01
0.425	1.09E+02	1.08E+02	8.62E+01	7.76E+01	5.87E+01	4.81E+01
0.450	1.09E+02	1.08E+02	8.77E+01	7.90E+01	6.04E+01	4.95E+01
0.475	1.10E+02	1.09E+02	8.82E+01	7.97E+01	6.18E+01	5.19E+01
0.500	1.11E+02	1.10E+02	8.91E+01	8.05E+01	6.41E+01	5.41E+01
0.525	1.12E+02	1.11E+02	8.97E+01	8.16E+01	6.52E+01	5.57E+01
0.550	1.12E+02	1.12E+02	9.07E+01	8.24E+01	6.69E+01	5.76E+01
0.575	1.13E+02	1.13E+02	9.12E+01	8.31E+01	6.76E+01	5.95E+01
0.600	1.14E+02	1.13E+02	9.18E+01	8.37E+01	6.88E+01	6.14E+01
0.625	1.15E+02	1.14E+02	9.24E+01	8.42E+01	6.99E+01	6.31E+01
0.650	1.15E+02	1.15E+02	9.31E+01	8.51E+01	7.12E+01	6.44E+01
0.675	1.16E+02	1.15E+02	9.40E+01	8.59E+01	7.25E+01	6.57E+01
0.700	1.17E+02	1.16E+02	9.45E+01	8.66E+01	7.35E+01	6.73E+01
0.725	1.17E+02	1.17E+02	9.53E+01	8.73E+01	7.42E+01	6.92E+01
0.750	1.18E+02	1.18E+02	9.61E+01	8.80E+01	7.58E+01	7.07E+01
0.775	1.19E+02	1.18E+02	9.72E+01	8.91E+01	7.69E+01	7.17E+01
0.800	1.20E+02	1.19E+02	9.80E+01	9.00E+01	7.78E+01	7.30E+01
0.825	1.21E+02	1.20E+02	9.86E+01	9.06E+01	7.87E+01	7.52E+01
0.850	1.22E+02	1.21E+02	9.99E+01	9.19E+01	8.00E+01	7.60E+01
0.875	1.23E+02	1.22E+02	1.01E+02	9.25E+01	8.12E+01	7.70E+01
0.900	1.24E+02	1.23E+02	1.02E+02	9.36E+01	8.26E+01	7.94E+01
0.925	1.25E+02	1.24E+02	1.02E+02	9.44E+01	8.38E+01	8.05E+01
0.950	1.26E+02	1.25E+02	1.03E+02	9.55E+01	8.52E+01	8.24E+01
0.975	1.27E+02	1.26E+02	1.04E+02	9.66E+01	8.70E+01	8.49E+01
1.000	1.28E+02	1.27E+02	1.05E+02	9.74E+01	8.78E+01	8.59E+01

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